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Quarterly History of Improvements and Discoveries, both at Home and Abroad, in Anatomy, Physiology, Pathology, Morbid Dissections, Surgery, Practice of Physic, Midwifery, Forensic Medicine, Materia Medica, Pharmacy, Chemistry, Botany, &c.

FORMING A USEFUL LIBRARY OF PRACTICAL REFERENCE.

(From Anderson's Quarterly Journal of the Medical Sciences, for Jan. 1824.)

I. ANATOMY.

THE most prominent circumstance in this department is the publication of Mr. Lizars' Anatomical Plates, a work of very superior execution and accuracy, which has met (and most deservedly) with almost unexampled success. It is perhaps worthy of remark, that this is from the Edinburgh school, and adds one link more to the chain of superior scientific works for which we are indebted to the genius of the North. Almost indeed all the anatomical works of merit have proceeded from the same quarter; for if we except Cheselden's, we know of no anatomical work which has originated in the English schools, that could match with the anatomical productions of Munro, Innes, John Bell, Charles Bell, Fyfe, Allan Burns, Wardrop, and Lizars. With the exception of Cheselden, which is above our praise, the English works on anatomy are chiefly manuals and abridgments to facilitate the study to beginners, rather than systems of scientific detail. We must, however, give even to these their due meed of praise, and till the London school can boast of a systematic work on anatomy, we must mention with credit the useful little works of Stanley, Shaw, Green, &c., which will prove of excellent assistance to junior students.

The plates of Mr. Lizars' work are among the best executed we have seen, and the letter press is also very masterly. Utility and practice has been kept steadily in view in the physiological and pathological remarks; and with the same design very excellent surgical directions for various operations are given in the form of notes. For example—

Venæsection.—"Considerable irregularity exists in the division of the brachial artery, for sometimes it divides as high up as the axilla, and frequently about the middle of the arm. As the branch which may be said to come off high up in the arm, whether it be the radial or the ulnar, for one of them generally pursues the course of the trunk, sometimes runs superficially or peripherad of the fascia of the arm, the young practitioner should be careful, when performing phlebotomy at the bend of the arm in candle light, that he does not mistake one of these branches for a vein."

Again "it (the median) is one of these veins which is commonly selected for phlebotomy, generally the median basilic; but here it is observed to be more than any of the other veins surrounded with nervous threads, while the median cephalic is the least: the former, however, from being large, is usually preferred, and hence nervous tumours sometimes result."

Lithotomy (*Lateral Operation*).—"The course of the internal pudic artery, along the ramus of the ischium and pubes, where, however, there is a strong protection of a dense aponeurosis, should be considered by the surgeon in the lateral operation of lithotomy. No branches of the artery, excepting the transversalis perinei, and the external hæmorrhoidal, should be wounded; and no muscles, excepting the transversus perinei and the levator ani, ought to be cut in this lateral operation." "This is the artery (the *dorsalis penis*) which is most liable to be wounded in the lateral operation of lithotomy, when deeper incisions are made anterior and superior, or dermal and pubic, to the membranous portion of the urethra."

On the Anatomy of the Eye. By Dr. Jacob, of the University of Dublin.*—The author of this excellent paper is well known as the discoverer of a delicate membrane, between the choroid coat and the retina, now usually called *Tunica Jacobi*, and which is here for the first time beautifully figured. He has undertaken, in this Essay, to investigate some of the points connected with the anatomy of the eye, which have been rendered interesting by the difference of opinion among scientific anatomists. The first point he takes up is,

The passage of the Optic Nerve through the Sclerotica.—Dr. Jacob thinks that the so called *lamina cribrosa* is nothing else than the extremity of the optic nerve, where the firmer tubercular portion is discontinued. Besides, if the sheath of the nerve be slit up through the sclerotic into the globe of the eye,

* Medico-Chirurgical Transactions, Vol. XII. Part II.

the nerve does not appear to cease with a rounded apex behind the lamina cribrosa, as has been represented, but is obviously continuous without any line of separation. Again, the lamina cribrosa, as it is called, has the same white colour as the nerve, and if compared with a section of the nerve at some distance, is not to be distinguished. It appears, therefore, that Albinus, Haller, Zinn, Cuvier, C. Bell, and others, have made a mistake in their descriptions, probably, from washing away the retina, and cutting off the nerve on the outside close to the sclerotica.

Canal of Petit.—The canal of Petit, according to Dr. Jacob, is formed in consequence of the folds of the corona ciliaris, consisting of two layers of hyaloid membrane, receiving injected air from one to another. That the capsule of the lens has no share (though the contrary is usually believed) in the formation of the canal of Petit, he concluded from filling the canal with air, keeping it some days in water, and then with great care removing the lens included in its capsule, when he found that the air did not escape from the cells, and he could pass a small probe all round in this canal.

Aqua Morgagni.—Dr. Jacob seems to talk doubtfully of the existence of this fluid, except in a state of disease, or after death. In the eyes of sheep or oxen while yet warm, no trace of it is to be found, though it collects in them soon after death. When it exists at all, he thinks it is confined to the anterior part.

Membrane of the Aqueous Humour.—The author thinks the lining membrane of the cornea is precisely similar to the capsule of the lens in its elasticity, and almost indestructible transparency. It is best seen in the eye of the horse, and can be detached in shreds, merely by scraping it. (See the following article on the Iris.)

Yellow Spot, Fold, or Foramen of Soemmerring.—On examining under water the eye of a young man five hours after death, the cornea and iris being cut away, and the lens removed from its place, "the optic nerve presented unequivocally the appearance of being drawn or folded, in form of a cross or star, with a dark speck in the centre, surrounded by a pale, yellow areola." The prominence of the fold was also ascertained by its shadow. No hole could be discovered where the dark speck was; for even after some days maceration in water, a probe could not be passed without tearing the membrane. On floating the membrane in water, after removing the nervous matter by maceration and agitation, the situation of the spot could no longer be ascertained.

Structure of the Iris.—The muscularity of the iris has long been a subject of keen dispute. The tissue of posterior radiat-

ing striæ, which Manoir and others suppose to be muscles, Dr. Jacob proved to be vessels, by successfully injecting them; and he inclines to think that the muscular power probably resides in the remarkable structure in front. He has presented beautiful preparations in proof of this to the Hunterian Museum. He has also demonstrated that the black pigment behind the iris is confined by a very delicate membrane, which Dr. Jacob is seemingly of opinion, is the secreting membrane of the aqueous humour.

Membrana Pupillaris.—Dr. Jacob's observations have led him to reject the idea that this membrane disappears about the seventh month, or that it is destroyed by a rent, as supposed by Blumenbach. He has usually found it present in most new born infants, and gives a fine drawing of an injected one of the ninth month. He says the vessels become first obliterated, and then the membrane is absorbed.

Anatomy of the Fascia Superficialis. By Dr. John Godman.* —The anatomy of fasciæ seems to be the least precise in the whole science, though it is of very great importance in many of the operations of surgery, and also in the discussions of physiology. Many pupils indeed revolt from the study of fasciæ, despairing of understanding it. We are therefore much indebted to Dr. Godman for the manner in which he has taken up the subject, and hope it will lead others to pursue similar investigations. According to Dr. Godman, the fascia superficialis covers with more or less degrees of firmness and thickness, the whole trunk of the body, anterior as well as posterior, together with the thighs, till it is lost in the fascia musculorum, just above the elbow. We shall give a short specimen of Dr. Godman's details.

"As we approach the os pubis, near which it covers the spermatic ring and cord, the handle of the knife may be used to separate it from the tendons reflecting it, we obtain the fairest view of the real character and situation of the spermatic cord. The fascia receives a very considerable thickening near the pubes from the lamina of cellular substance exterior to it—and it is continued over the corpora cavernosa penis as well as sends down a strong sheet into the scrotum, which has received the name of Camper's ligament. This portion descends obliquely in the direction of the cord, which it covers, and of the testicle which it surrounds. The external portion passes downwards, over the whole of Poupart's ligament to the upper part of the thigh, lying immediately under the integuments, and over the cluster of lymphatic glands and vessels, which fill up the depression below Poupart's ligament.—We may next raise the fascia superficialis from over the crest of the ilium, and pursue it backward to the spine, and we may follow it downwards covering the

* Philadelphia Journal, No. 12.

whole of the gluteal muscles, and across covering the whole perineum.

"The platysma myoides is on the outside of the fascia, and in immediate contact with the integuments."

The fascia superficialis covers "the whole of the neck ascending in front of the edge of the chin where it is lost.—As we pass towards the angle of the jaw, we find it rising higher—and extending towards the ear, so as entirely to overlay the parotid gland." At the posterior edge of the sterno-cleido-mastoideus it splits into two portions, "thus the muscle is inclosed in a distinct sheath, the same fascia forming both the deep and the superficial covering of the neck."

We do not vouch for the accuracy of all this, as Dr. Godman* has a system to support, and may be, as is usual, unduly biassed; but it is a subject certainly well worthy of investigation.

Decussation of the Optic Nerves. By M. Treviranus.†—By immersing the optic nerves in alcohol, till they are hardened, Vicq D'Azyr found that the medullary fibres of the external edge of the superior and inferior surfaces of the decussation go immediately to the eye of the same side, while the middle tissue is homogeneous. From microscopical observation also, the Wenzels found the nerves composed of long fibres, some of which were large, and others narrow, not apparently separated, nor straight like the fibres of muscles, but variously arranged. The greater part of them also, such as those on the outer side of the optic nerve, follow the same direction from the eye even to the optic thalamus, while those on the inner side cross obliquely to the opposite, but without any apparent crossing at the point of junction.

"M. Treviranus, with a view of elucidating the point, has examined the optic nerves of the male *simia aygula*, which he immersed for some months in alcohol. On the external margin a glass of very moderate power was sufficient to show the fibrous structure. After again softening them, by keeping them in caustic potash, and removing their sheath and separating their fibres, he demonstrated that the external fibres of the superior side of each was continued from the cerebral extremity to that in the eye, without uniting themselves to those of the other side; whilst the internal and inferior fibres of one nerve went to the other side, and united with the fibres of the opposite nerve. It was difficult to say whether any of the fibres actually passed from the one side to the other; though he imagined some did. The whole mass of the internal fibres interlaced together had a greater volume than that of the external, which ran to the eye without uniting to those of the opposite side."

* The British Editor was not required "to vouch for all this;" it would have been enough if he had examined the structure described. Dr. G. had no other "system" to support than to relate what he saw.—*Ed. Journ. For. Med.*

† Journal Complimentaire.

II. PHYSIOLOGY.

While we have not one English work on physiology, the continental authors are prolific both in systems, dissertations, and manuals. We have now before us the two first volumes of a systematic work by M. Adelon, whose name is well known to our readers.* He means to extend it to four, but if we may judge from the present execution of the book, he will find even six too small a space for his proposed plan.

In the execution of the body of his work, M. Adelon proposes 1. To study in detail each of the functions to which he has referred the phenomenon of human life; 2. To establish the connexion of these functions, and to point out the manner in which their combination forms the individual; 3. To study the series of changes, constituting the ages, which human life presents; 4. To point out the differences compatible with health, which present themselves in individuals, and which are known as temperaments; 5. To terminate by the study of the special forces, by which man, like all other living beings is regulated; and the investigation of which constitutes the philosophy of the science. The two volumes which have already appeared do not complete even the first part of this plan; they include the functions of relation or of animal life; and one only, digestion, belonging to organic life.

As a preparatory step to human physiology, M. Adelon enters into an examination of the rank which man occupies in the creation; ascending in his comparisons from inorganic to organic bodies; from vegetables to animals; and thus to the being who holds the first rank among them. He details at length the physical and chemical composition of the solid and fluid parts of his body, and the mode of its organization. Together with most of his countrymen, he speaks of life as consisting in a certain series or succession of actions occurring in organized bodies; without pretending to explain, or even at the present period to investigate the cause or causes on which these actions depend.

Doctrine of Functions.—A considerable space is occupied by the discussion of the nature and number of the functions constituting human life. M. Adelon proposes as specific characters of a true function, that it should perform a special and distinct office in the animal economy, and be the result of the action of a certain and evident organ or apparatus of organs. This, though perhaps as satisfactory an arrangement as the subject admits, is not altogether free from objection: the produc-

* Physiologie de l'Homme, Par N. P. Adelon, D. M. P. &c. &c. Paris, 1823. Vols. 1 and 2.

tion of heat has an equal claim with circulation, or respiration, or digestion, to be considered a function, and yet no one can pretend to fix the situation or the set of organs by which it is produced: so also of contractility (or more correctly of contraction, for contractibility or irritability implies a faculty or power, and not a function,) our knowledge is insufficient to determine with what class of phenomena it should be arranged; its general diffusion through almost all structures is apparently in contradiction to its being the result of the action of any particular organ or set of organs, the character necessary to establish it in the rank of functions. Bichât, Chaussier, and others, propose to do away with this difficulty, by calling caloricity, or the power of producing heat, and contractility or irritability, vital properties; but surely no real advantage is thus gained! The characters which M. Adelon proposes apply exactly enough to the more complicated phenomena of life, but not to the simple and fundamental ones. Digestion, respiration, absorption, circulation, sensation, voluntary motion, thought, &c., are, according to this standard, true functions; for first, they serve determinate purposes in the vital economy; and secondly, they depend on the action of particular and easily distinguished organs, or sets of organs; but they are confined to the higher orders of organization, whilst irritability and caloricity, or rather the actions to which those powers give rise, are diffused alike through the most simple and the most complicated organizations, do not appear to require any distinct organ or set of organs for their production, and present the only essential and characteristic ground of distinction between living and inert bodies. M. Adelon has disengaged himself from this embarrassment by passing over irritability in silence, excepting its relation to muscularity in the production of voluntary motion, and by classing calorification amongst functions, assigning the parenchymatous structure of every part of the system, as the instrument of its production.

Arrangement of Functions.—M. Adelon admits of eleven functions, founded on the basis which he proposes, viz. 1. *sensation*, including the action of the external senses and the mental faculties, its organ being the nervous system; 2. *voluntary motion*, depending on the muscular system; 3. *expression*, including the external appearance, gestures, and articulate language, equally connected with the nervous and muscular systems, and with their functions, forming the means of communicating with the external world; in other words, constituting the animal life of Aristotle, Bichât, and Grimaud; 4. *digestion*, or the action of the different parts of the alimentary canal, and including the subordinate functions of mastication, deglutition, &c.; 5. *absorption*, of two kinds, external, or digestive, and in-

ternal, effected by the action of lymphatics and veins; 6. *respiration*, or the combination of atmospheric air with the blood, a process carried forwards in the lungs, but in man and the higher animals, to a certain extent dependent on sensation and voluntary motion; 7. *circulation*, carried on by a heat and vessels, first bringing the particles gained by digestion in contact with the air, and then dispensing them regularly to every part of the system; 8. *assimilation*, or nutrition, the action by which every part of the body selects from the circulating fluid the particles necessary for its renovation and support; 9. *calorification*, of which we have already spoken; 10. *secretion*, or the separation of certain parts from the blood by organs, the actions of which, though varying according to their structure, yet present analogies sufficient to prove the similarity of their nature and causes; 11. *generation*, the exercise of a particular set of organs, serving to ensure the continuation of the species, as the functions already mentioned do of the individual, and like many other actions of organic life in the higher classes of animals, considerably dependent on, and influenced by the functions of sensation and voluntary motion.

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Among the experiments of interest made on the various functions of the nerves, we have to notice those of

M. Beclard *on the Section of the Pneumo-gastric.*—"M. Dupuy read a series of experiments relating to this subject, which he had made on the horse and sheep. These experiments were repeated by M. Beclard on the dog; and the following are his deductions:—1st. If we cut the pneumo-gastric nerves of both sides at the same time, the animal dies soon afterwards. 2dly. If we cut them only on one side life is not affected, and the animal is but little incommoded by the section. 3dly. If, after having divided them on one side, we wait some days, and then divide the other, the animal lives a longer or shorter period, in proportion to the greater or less distance of time which is allowed to elapse prior to the second section; and at the end of a certain time, he lives after the second experiment, as if one section only had been made. 4thly. If, at this last period, he divide both nerves, the animal dies, as in the first experiment. M. Beclard deduces from these facts, that, at the end of a certain period, cicatrization takes place between the two extremities of the nerve, so as to completely restore its functions."*

Magendie's Plagiarisms from Mr. Charles Bell.—We have a very high respect for the talents and researches of M. Magendie; but we are sorry that he seems but too deeply imbued with the spirit of his countrymen, in appropriating all great discoveries to themselves, and allowing but a secondary place in the scale of merit to the philosophers who have not had the honour

* Academie Royale de Medicine.

to be born in the *Grande Nation.* We have been led into these remarks by observing an article in Dr. Macleod's Journal, in which the writer shows most satisfactorily, that the experiments on the functions of nerves, which have lately made so much noise, are by no means new, but were actually made fourteen years ago, before M. Magendie even began his career as a physiologist. We quote a single passage from Mr. C. Bell's "Idea of the Anatomy of the Brain," dated 1809:—

Double Roots of the Spinal Nerves.—"On laying bare the roots of the spinal nerves, I found that I could cut across the posterior fasciculus of nerves, which took its origin from the posterior portion of spinal marrow, without convulsing the muscles of the back; but that, on touching the anterior fasciculus with the point of a knife, the muscles of the back were immediately convulsed. Such were my reasons for concluding that the cerebrum and cerebellum were parts distinct in function, and that every nerve possessing a double function obtained that by having a double root."

It even appears that M. Magendie was well aware of the honour that was due to Mr. C. Bell; for in his Journal for October, 1821, he copied from Shaw's Manual Anatomy the new views of the nervous system; yet in a year afterwards, he thinks fit to say, "For a long time *I* have been desirous of discovering what effects would be produced upon an animal, by dividing the posterior roots of the spinal nerves.—I had not entertained the slightest idea of what would be the probable result of this experiment," in direct contradiction to his own words.

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The Americans are making most rapid advances in experimental researches, and bid fair to rival the schools of the old world in their varied investigations. We should like to see them also cultivate simplicity of language and detail in their writings. The prose-run-mad writings, for example, of such a man as Professor Caldwell, are enough to corrupt half the young men of a College. We are glad, however, to find many exceptions to this, and among others the paper now before us, namely,

Experiments on some of the Nervous Functions. By Dr. Hopkinson.—This young experimenter undertook to repeat some of the important experiments of Mr. Charles Bell, particularly with regard to the respiratory nerves. We shall give one of his experiments as a specimen:—

"*On a young Rabbit, Wednesday, July* 24.—Exposed both portiones durae. That on the right was destroyed by a most extensive dissection, the left but partially, as only one branch was cut. Motion of the nose did not appear altogether arrested, on either side, which was owing to the left ali nasi acting particularly on the right. This animal is preserved, to know whether a union will take place or not.

Upon a more fair and just ground, this point could not possibly rest, and if the functions return with a reproduction, it is doubly proved. At times the whole lip and nose appear at rest.

"*Friday, 26th.*—Upon a close examination I found the right lip quite motionless; on the left side, only irregular and undecided. The nose does not move as before the operation, but appears to be drawn to one side, as if the left only acted, drawing the right ala nasi to the left. Parotid gland discharging matter and enlarged, but on the left side the wound was healed.

"*July 28th.*—Now very evidently, the right side is deprived of all motion, the left imparting a partial action to the ali nasi on the opposite one.

"*August 6th.*—Wounds entirely healed, lips and nose as at last examination, but occasionally contracted by the muscles of the mouth, thus proving the perfect integrity of the nerves of "muscular motion and sensibility" of the part. A very strange alteration made in the expression of the countenance, occasioned by the right lip being contracted, or flattened, to a great extent, while on the other side the usual fulness remains—hence the face is distorted.

"*September 12th.*—Seven weeks have now elapsed since the operation, and yet the parts seem in every respect as at the last examination. On trial, find the sensibility partially lost on the right, and not quite so sensible as the other. *Conclusion*—Nerve not yet reproduced, yet from the experiments of Haighton, of Pring, and others, we learn, between six and seven weeks were sufficient to restore its powers. The result of this I consider all important.

"*Wednesday, Oct 9th.*—Upon a close examination, could perceive no motion on that side, the left only acting, although more than ten weeks had elapsed since the operation: now made an incision over the portio dura, on the left side, and passed two ligatures about one fourth of an inch apart—action not arrested until a second branch was found, and treated in a similar manner, when all action instantly ceased. Cotton ligatures were used.

"Now observed, what had not been before discovered—that a slight motion was commencing on the right side, though it is rather tremulous—the nerve appears about regaining its functions.

"*Monday, Oct.* 14.—The rabbit was found dead, its mouth being so completely crammed with food, it could neither breathe nor swallow. Dissection proved death to have taken place from suffocation, the lungs being much congested, the blood fluid, &c. The powers of the nerve seemed daily to improve, and would probably soon have been restored entirely. The right portio dura was found perfectly regenerated, appearing as one continued nerve. The left still retained the ligatures, without any change perceptible in it."

Union of Nervous Substance. By M. Larrey.*—"This veteran surgeon presented to the Institute, the stump taken from the body of a man who had undergone amputation. The median and internal cutaneous nerves approximated towards each other, and formed a nervous anastomosing bulb. Several of the members thought the union accomplished by means of fibro-cellular substance, resembling

* Revue Medicale

that which is formed in cicatrices of other tissues. M. Larrey persisted in the opinion, that there was an anastomosis, or direct union of the corresponding extremities of the two nerves. This gave rise to a discussion whether, after the section of a nerve, the nervous functions could be re-established along the line of the cut nerve. The greater number of the academicians thought, that where one nerve supplies exclusively one or more muscles, the division of it is attended with incurable paralysis; but that where the parts to which the cut nerve goes are furnished with other nerves, as in the case of the section of the median nerve of the arm, the power of motion and the sensibility are gradually restored."

To us this seems halving the question.

The Nature of Nervous Functions. By MM. Prevost and Dumas.*—We have repeatedly, in our former series, had occasion to mention the researches of MM. Prevost and Dumas. Their more recent experiments have led them into a new field of inquiry, founded on the discovery of Oersted, respecting the mutual relation of magnetism and electricity. They think it extremely probable that there exists in every nerve two opposite galvanic currents, and that this serves to explain why the magnetic needle experiences no influence when placed by the side of the nerve at the moment of a violent muscular contraction. Neither is it affected when placed beneath the muscle, or above it, under the same circumstances; and this must depend upon the short distance which separates the ascending and descending filaments of each nervous branch. It remains to explain the contractions produced by the influence of the brain. The authors think that they likewise depend upon galvanic currents; and they have endeavoured to prove this in some circumstances which appeared to them favourable for that purpose. They at first attempted to intercept the current in the pneumo-gastric nerves; they afterwards placed animals under the influence of the nux vomica; and, during the existence of the tetanus, they endeavoured to ascertain its presence in the different portions of the brain, or in the spinal marrow, or in the sciatic nerves, first whole and then divided. The results have not yet attained a sufficient degree of regularity for publication, but being now occupied in these different researches, they still hope to be able to satisfy the curiosity of physiologists on this point.

Obstruction of Blood in the Lungs. By Dr. Williams.†—From several very judicious experiments, Dr. Williams has drawn the following corollaries:—

"1. That the blood is obstructed in its passage through the lungs, on suspension of respiration, while its circulation through the other parts of the body still continues.

"2. That the obstruction of the blood in the lungs, on suspension of respiration, is not the effect of a mechanical cause.

* Archives Générale de Medécine. † Annals of Philosophy

"3. That the obstruction of the blood in the lungs, on suspension of respiration, arises from a deprivation of pure atmospherical air.

"4. That the blood which is found after death in the left auricle and ventricle, is the remnant after the last systole, and the subsequent draining of the pulmonary veins.

"5. That the obstruction of the blood in the lungs, on suspension of respiration, is one of the principal causes of the vacuity of the system circulating arterial blood, after death.

"6. That the immediate cause of the cessation of the action of the heart is a privation of its natural stimulus, arising from the obstruction of the blood in the lungs."

He concludes—

"Now I flatter myself that the cause of the phenomenon that reserved the discovery of the circulation of the blood to modern times, and to the honour of our country, has been disclosed; and that no one, for the future, however sceptical, will be able to urge the vacuity of the arteries after death as an objection to the doctrine of our immortal Harvey."

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III. PATHOLOGY.

This seems to be the department of medical science in which at present the greatest activity is in operation. This is laudable, but we fear it is, and will be carried too far, to the exclusion of more practical and useful inquiries. Morbid dissection is undoubtedly of high importance; but when it is performed, with the view of supporting some favourite theory, as it most frequently is, particularly in France, and among the Clutterbuckians and others at home—we think that it is likely to be more productive of evil than good. The old system of symptom hunting, bad as it was, seems much less calculated to prove injurious. We are the more particular in mentioning this, that all the medical journals at home manifest a strong leaning to this deceptive field of speculation. In the Transactions of the Associated Apothecaries, reviewed above, we have seen it carried to the highest point of visionary absurdity. We are happy to know, however, that this dreaming system is more written about than practised in this country, and we hope it will long continue so.

Pathology of the Spleen. By a CORRESPONDENT.—"Even at this day, the office of the spleen is so little known, that perhaps every fact concerning it, however inconsiderable, is deserving of attention. On this account, the following case of enlarged spleen has been summarily drawn up, and accompanied by a few brief remarks:—

"*Case.*—A mongrel, the offspring of a Newfoundland dog and a pointer bitch, in the seventh year of age, had, for the two years previous to his death, been troubled with a cough, which was aggravated by running. Within the last three or four weeks of his existence, the cough disappeared, and left behind it a wheezing and breathless-

ness, much increased by any thing that agitated him, and after that he was hardly ever able to lie down; and if he chanced at any time to fall asleep when in a sitting posture he often fell, but instantly sprung up again. His body had become emaciated, his eyes dim and large, and his countenance old-like and withered: his feet and legs inclining to swell; his abdomen hard and tumid, and more so after eating, particularly on the left side; appetite continued, but he ate sparingly and often; his sight and smell were imperfect, but his hearing as quick as ever. From stupidity he had lost all idea of cleanliness. His stools latterly were thin and bilious; his breath was fœtid; his urine at times plentiful. His size was that of a pointer. In this state he was hanged. On laying open the thorax, the lungs and heart were found swimming in water. In some places the former were hard and swelled, and glued to the left side and to the diaphragm, and when cut open, showed a whitish substance resembling white or yellowish dry rotten wood. One lobe was of a dark or purplish colour, and as firm as a piece of liver; but in other parts the lungs were not diseased. The heart was in its natural situation, and of its usual size. Close to it, on its left side, was a whitish bag, of the same size as the heart, which had an elastic feel, and evidently contained a fluid. On making a small opening into it with a scalpel, a fluid, like yellow serum, sprung out to the distance of two feet, and on laying this bag open, its inner sides showed an incrustation, in appearance like yellow rotten wood, only finer in its grain. Not a drop of water was contained in the abdomen. The liver, the intestines, and kidneys were quite sound. The stomach bore a great resemblance to the colon, being long and narrow. The gall-bladder contained hardly any bile. The spleen was prodigiously enlarged, and in appearance five times the size of a cow's. It was quite solid and of a dark red colour, seeming to contain nothing but blood-vessels, immense in number, and of very small size. The vessels that supplied it seemed to be of their natural size. It covered the whole surface of the intestines, and seemed to be in a state of rapidly progressive enlargement. It was thought that this dog's complaints were occasioned by his being obliged to lie all night in a cold damp outhouse, after having been always accustomed to a warm dry lodging. When the disease was still in its infancy, he was removed to a better situation, yet it continued its progress.

"It would seem from this, that the enlargement of the spleen had some connexion with the diseased state of the stomach; in short, the spleen seems to have been a diverticulum for receiving that blood which could no longer be admitted into the vessels of the stomach. At other times, when the spleen resists enlargement, the vessels of the stomach give way, and hæmatemesis ensues. I have seen several cases of elderly people, which I suspected were of this nature. Diemerbroeck thinks, that when the liver is any way obstructed, there may be a retrograde motion of the splenic vein, by which its blood may be emptied into the stomach by the vasa brevia, or into the intestinal canals by the meseriac veins; and, on the contrary, when the blood does not find an exit in those ways, it will distend the spleen itself. In a case of diseased or schirrous spleen, Diemerbroeck saw

three chamber-pots full of an ink-like fluid passed by stool. Many of the ancient authors have spoken of a connexion betwixt the stomach and spleen, and the same thing has been adverted to by some late German authors. It would be an easy matter to collect notices on this subject from books; but the investigation would be rather pedantic than useful."

Singular Affection of the Heart. By DR. FISCHER, of Hildburghausen.*—In this uncommon case, detailed by Dr. Fischer, both the patient himself and also the by-standers, among whom was a physician, could distinctly hear the beating of the heart for six or eight weeks previous to death. They were not only sensible of the noise in the region of the heart, but, on feeling the pulse at the same time, it was observed the pulsations were simultaneous with it. This noise had a great resemblance to the croaking of a frog, and it could be heard easily at the distance of five or six paces from the patient. On examination after death, the auriculum dextrum and the vena cava ascendens were found dilated to a considerable size. The right ventricle contained a firm polypus, of about an inch in breadth; one division of which protruded into the auriculum dextrum; the other into the arteria pulmonalis.

Hypertrophia of the Heart. By M. CHOMEL.†—At a late sitting of the *Académie de Médécine* of Paris, M. Chomel presented the heart of a man who had died at the *Hôpital de la Charité*. The parietes of the right ventricle showed such a hypertrophia, that its cavity was almost blocked up. The orifice of the pulmonary artery was so considerably contracted, that it could not admit the extremity of the little finger. In the remainder of its extent, the pulmonary artery was of its usual diameter. The other cavities of the heart had preserved their natural proportion. The patient had laboured under the ordinary symptoms of aneurism. There was every reason to believe that, in this individual, who was quite young, the extreme narrowness of the opening, between the right ventricle and the pulmonary artery, was congenital, and that it favoured the development of the hypertrophia of the right ventricle.

Pathology of Plague. By M. VALLI.‡—This author is well known for his intrepid investigations of the plague; and from his experiments he has been led to draw the following conclusions:—

"1. The plague is a *contagious* disease, and persons who have once *had it*, are *very rarely* attacked a second time.

"2. The infection can be communicated to a person, by rubbing the matter of a pestilential sore on his skin.

* Medicinisch Chirurgische Zeitung. † Archives Générale de Medécine.
‡ Philadelphia Journal.

"3. If pestilential matter, and variolous matter, be mixed together, and rubbed on the skin of an individual who has not had the small-pox, or the plague, it will produce a mild plague, which is free from danger, and will protect against future infection. But the plague will not be so mild, if the person thus infected has previously had the small-pox.

"4. If pestilential matter is well mixed with sweet oil, or unctuous matter of a similar quality, and rubbed on the skin, it will communicate a mild and safe pestilential disease, which generally protects from future infection.

"The above conclusions were derived from about three hundred experiments, carefully conducted."

Nature and Causes of Hydrothorax. By J. Baird, of Leadhills, Scotland.*—"The peculiar circumstances which seem to operate as causes of hydrothorax, are such as to rank it among diseases of increased vascular action, viz.—those most liable to the disease, are such as suffer from visceral obstructions, who have been intemperate, particularly in regard to the use of ardent spirits; such as have laboured under asthma; such as have had frequent acute inflammatory affections of the breast, and which may have left a teazing cough for after-life; and above all, such as have been exposed to breathe noxious or confined air. The operation of this *last* cause has been the mean of sending me more patients with this disease, than all the others together; for the miners must sometimes work in places where there is so little circulation of air, that their candles can scarcely burn; and I have almost invariably observed, that a continuance for any considerable length of time (although in such situations they may only work three or four hours daily), brings on pneumonia in the young and plethoric, and hydrothorax in the old, if rather of spare habit of body; and if there should happen to be any healthy middle-aged men working as hand-neighbours to these others, although of course both must breathe the same impure air, these middle-aged men will remain free from any *urgent* complaint, till both their young and their aged neighbours are laid aside, perhaps never more to return. I became so fully convinced of this fact, as long ago to have induced me to recommend to the agents and overseers of this place, to avoid, as much as possible, putting either very young or very old men into such situations.

"The only *theory* which I could form on the subject was, that in asthma, frequent coughing, or breathing impure air, the chest being overdistended, not only runs a risk of rupturing some of the capillary vessels, but also produces an increased flow of blood in those parts, which, in the old and weak, will only produce an effusion of serum; but in the young, will excite more urgent symptoms, by inducing acute inflammation. And thus I was disposed to apply the same depleting plan to both cases, only modified, of course, to meet the strength and constitution of the patient. I avoided giving a variety of diuretics, or using blisters, &c., that I might be the better able to judge of the real benefit derived from the bleeding."

* Edinburgh Medical and Surgical Journal

Pathology of Mania. By M. Hufeland.*—"It is a well known opinion of M. Esquirol that mental alienation often depends upon an anomalous situation of the arch of the colon, and especially upon a vertical position of this intestine: the following case appears to bear upon the point. A woman, aged forty-five, and of a constitution otherwise perfectly healthy, fell into a deep melancholy on the death of her husband, to whom she was tenderly attached. One of the concomitant signs of this melancholy was a great enlargement of the abdomen, accompanied with an oppression of the respiratory organs, and to which succeeded a state of mania, which continued unabated for two years; at the end of which period the patient committed suicide.

"On examining the body, besides the ordinary signs exhibited by a body destroyed by hanging, an excessive protrusion of the abdomen was remarked, equal to the size of a woman in the last month of her pregnancy. The head exhibited all the signs of plethora usual upon these occasions. In the thorax there was nothing remarkable. In the abdomen, all the intestines were more or less distended with gas, and showed well-marked signs of inflammation. The stomach, as well as the bladder and uterus, appeared perfectly healthy, whilst the liver and the spleen were of an enormous size. But what especially attracted attention, was the total displacement of the transverse arch of the colon, which, with the ascending portion of this intestine, formed a species of triangle."

Pathology of Aphonia. By Dr. Ryan, of Kilkenny.†—"Speech may be injured or suppressed by diseases of the nerves which supply the organs that assist in producing that noble faculty,—by pressure or wounds on those cerebral productions; by affections of the larynx, its muscles, ligaments, cartilages; by disorders of the glottis, trachea, fauces, palate, sinuses; by tumours or polypi; by ozæna, cancer of the lips, cheeks, or nose; by inflammation, enlargement, schirrus, cancer, or congenital vitiation of the tongue; or by its frænum being too short. Forestus describes inflammation and suppuration of that organ; and Galen mentions a case of œdematous tumour of it, so great as to cause it to be protruded from the mouth; and a second case, which did not proceed from schirrus or œdema, though it increased to a considerable extent, but from too copious a supply of aliment deposited in its substance. Claudinus was consulted in the case of a girl, aged twelve, whose tongue was wonderfully enlarged, not from œdema, schirrus, or other vitiation of its structure, as it readily diminished by pressure; but it proceeded from a rupture of the frænum linguæ, which caused a great determination of blood to that organ; and, strange to relate, this tumour was said to increase in the morning and become livid, while it declined in the evening! I have lately seen a case of schirrous enlargement of the tongue, which was greatly aggravated by the use of mercury, and which suppressed the faculty of speech, and ultimately destroyed the patient. I divided the frænum linguæ in a girl, aged ten, who could scarcely speak, yet obtained an evident degree of fluency immediately after the ope-

* Journal der Praktischen Heilkunde.
† Edinburgh Medical and Surgical Journal.

ration. If both recurrent nerves which supply the larynx, be divided, speech and voice will be abolished; if a wound be made below the larynx, voice will be suppressed; if above it, speech will be destroyed; and the diminution or destruction of nervous power in the fifth pair of nerves is the principal cause of loss of motion in the tongue. Avicenna relates a case of aphonia, induced by the application of deep scarifications to the occiput, which, he said, wounded some of the nerves that proceed from the cerebellum through that part. If cutaneous eruptions be suddenly repelled, or congestion of blood take place in the fauces or tongue; or the suppression of periodical evacuations in plethoric habits; or the influence of fear or other passions; the too free use of spirituous potations; or whatever injures or destroys the parts connected in producing voice or speech, will cause an abolition of that faculty. Certain spasmodic diseases, as hysteria, also effect it. I have seen two cases, in both of whom the incisores teeth had been displaced by external violence; they laboured under paraphonia until these substances had been replaced, after which the voice and speech became natural, and the teeth perfectly firm. In low fevers, or in apoplexy, the voice is regained slowly; and in the case of a young lady, who was in the last stage of phthisis, I lately observed this clearly illustrated: she lost the power of speech for thirty hours, appeared moribund, pulse scarcely perceptible; the oleum ammoniatum was applied to the external fauces, which caused several feeble motions of the tongue and efforts to speak; which faculty she gradually regained, and retained to the third day, when she expired.

Pathology of Cerebral Disease. By Dr. Scoulton of Metz.* This author has made some researches for the purpose of illustrating the connexion between irritation of the mucous membrane of the intestines and the pia mater. He thinks that diseased states of this last-mentioned delicate membrane have been often overlooked, in consequence of the changes in its structure not being very conspicuous to the hasty and superficial observer. We conceive, however, that the changes of structure indeed, in this tissue, are more easily detected than those in most other parts of the body. In a state of health this web is perfectly transparent, thin, and colourless, without adhesions. Any deviation from this state must therefore be one of disease. It is no doubt desirable, but seldom possible, to have a healthy brain to contrast with an unsound one when we are prosecuting researches after death. This was the plan pursued by Wenzel in examining the brains of epileptic patients. Dr. Scoulton thinks that all parts of the intestinal canal do not sympathize equally with the brain. The stomach and small intestines possess a much closer affinity with the meninges than the great intestines. So it is with respect to the different coats of the intestines. While inflammation of the mucous membrane

* Journal Universel and Medico Chirurgical Review.

gives rise to corresponding disturbance in the pia mater, this last remains free from all sympathy in peritonitis. When the mucous membrane of the stomach or small intestines is inflamed, Dr. Scoulton has observed the vessels of the pia mater injected with blood, forming red patches, and sometimes amounting to extravasation. These appearances are chiefly found in the anterior and lateral parts of the brain—unless the abdominal inflammation be very violent, in which case nearly the whole of the pia mater is affected—its minute vessels carrying red blood, and giving rise to effusion and adhesions. Dr. Scoulton thinks that these views are likely to bear on and elucidate many of the phenomena of apoplexy, on the principle of every inordinate excitement of the stomach being communicated to, and, as it were, repeated in, the brain, thus occasioning determinations of blood to the head, and rendering its vessels gradually more debilitated and ready to give way under any particular increase of action.

On Sublingual Pustules in Hydrophobia. By M. MAGISTEL.* We mentioned, in our former series, the communication of Marochetti, of Moscow, respecting the sublingual pustules observed by him in hydrophobia, and also the failure of MM. Magendie and West, in discovering any pustules in a case under the care of the latter.† M. Magistel, of Saintes, it would appear, has been more successful than Mr. West. Several individuals of both sexes, and some sheep, having been bitten by a rabid dog, M. Magistel was sent by the administrative authorities, and he cauterized the wounds forty-eight hours after the accident. He carefully watched for the appearance of the pustules mentioned by M. Marochetti; and in several subjects confided to his care, he observed pustules arise, unknown to the patients, without any precursory symptoms, and without occasioning pain, or cramping the movements of the tongue. Some of these pustules appeared on the sixth day, others subsequently, and the last on the thirty-second day. The cauterization of these was soon followed by their perfect cicatrization, no traces remaining of them, and the cauterized parts being in the best possible condition. The *decoctum genistæ* was perseveringly administered to all those who were bitten, and was used for washing the wounds, which unfortunately had not been cauterized until forty-eight hours after the accident, except incompletely, by the nitric acid, at the expiration of more than forty-five hours. Of ten bitten, whom M. Magistel attended, many of whom had received numerous and deep wounds, five died with all the symptoms of the most confirmed hydrophobia, in spite of the uninterrupted use of the *decoctum genistæ*, and the cauterization of the sublingual pustules.

* Journal Universel and Medico Chirurgical Review.
† Journ. Général de Medécine.

On the Sublingual Pustules in Hydrophobia. By M. Villerme.*—The preceding facts are farther confirmed by the following: M. Villerme has communicated to the Royal Academy of Medicine the case of a female, whose upper lip was torn by a mad dog. The wound was cauterized at the end of thirteen hours. On the eighth day, a transparent pustule was seen under the left side of the tongue, of the size of a lentil, similar to the pustules observed by M. Magistel under the same circumstances. On the following day this vesicle had disappeared, but was replaced by another, which only lasted twenty-four hours. On the tenth and eleventh days, several other pustules showed themselves; but after that period no others were observed. It is added, that three weeks have elapsed since the bite, but as yet the woman has not shown any signs of hydrophobia.

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IV. MORBID DISSECTIONS.

This division of our History is closely connected with the preceding, and perhaps scarcely merits to be separated; but we think it better to give a few cases of examination after death distinctly apart and in more detail.

Case of Enlarged Spleen. By James King, Esq., Hamilton, Scotland.†—The patient in this case was a tall young man aged 20, of strumous constitution. Mr. King treated him for epistaxis and afterwards for phthisis. Upon a deep seated, hard swelling being discovered in the hypochondriac region he was put under mercurials for six weeks, but became worse, had repeated epistaxis, much cough, dyspnœa, anasarcous extremities, and, latterly, symptoms of abdominal inflammation which became fatal.

Dissection.—"After removing the integuments of the abdomen, our attention was first directed to the peritoneum, which we found very much inflamed, thicker than natural, and quite opaque; its adhesion to the abdominal muscles was nearly destroyed by the intervention of a quantity of purulent matter; but to the omentum and abdominal viscera, with which it is [*was*] in contact, it had formed many strong connexions, which it required a considerable force to destroy. After removing these connexions, a quantity of a high-coloured liquid (about a gallon and a half) was removed from the abdomen before proceeding farther with the dissection. On examining the stomach and alimentary tube, they were found much inflamed, and covered with a network of small vessels carrying red blood. Turning aside the intestines, so as to expose the tumour in the left side, we found that it was, as had been supposed, an enlargment of the spleen, which was found firmly adhering to the large end of the

* Revue Medicale. † Medical Repository.

stomach, and to part of the transverse arch of the colon, by a tense, white, transparent membrane. We next removed this viscus from the abdomen, and found it very much enlarged indeed, not being less than seven or eight times its natural size; its coats had been chiefly affected with the inflammatory action, which had evidently extended to the intestinal tube: on cutting into its substance, a quantity of whitish fluid could be pressed out, but in colour, consistence, and other respects, it was quite natural. On examining the liver, it was found unaltered in structure, but considerably increased in size; the gall-bladder was nearly twice its natural size, and completely distended with bile of a brownish yellow colour. All the rest of the abdominal viscera were perfectly healthy. In the thorax the following were the morbid appearances:—The left lung was found healthy in every respect; but on examining the right cavity of the thorax, considerable disease was brought into view; it contained about half a gallon of a greenish watery fluid, which being removed, the lung of that side was found greatly diminished in size, and much firmer in texture than natural—so much so that it could be of very little use as a respiratory organ; in many parts it was adhering firmly by short, ligamentous bands to the pleura costalis. About five table-spoonfuls of fluid were found in the pericardium, but the heart was found to be healthy."

Case of Intussusceptio. By F. Bush, Esq.*—"J. Coombs, a lad twelve years of age, was attacked with pain in the umbilical region: some mild laxative was given, without affording relief. On the second day I saw him: the disease was marked by sickness, vomiting, severe pain extending over the abdomen, a dry brown tongue, skin extremely hot, and the pulse corded, hard and small, making 120 beats in the minute. The case was clearly marked as being inflammation of the bowels: blooding, laxatives, the warm bath, and blisters, with the usual remedies for subjugating such a disease, were used without benefit. On the fourth day, when he appeared much exhausted, and his dissolution was expected, a considerable quantity of feculent discharge, mixed with blood, took place per anum: from this time the bowels were easily acted on by the mildest laxatives, the sickness left him, the pulse became less frequent, and his pain inconsiderable. Matters went on thus favourably until the eighth day from this attack, when a portion of bowel was voided with a common alvine discharge: this portion, fifteen or eighteen inches long, was part of the ilium. From this time his convalescence was regular and rapid; but he complained of pain in attempting to gain the erect position, and was obliged to keep himself bent forward for three or four weeks, at which time he had regained his health; the bowels being regular, but rather relaxed.

"About twelve weeks after his complete recovery, he was attacked with typhus fever, of which he died a fortnight after the seizure. I availed myself of the opportunity to examine the contents of the abdomen after death. The traces of the diseased bowel were visible, by a considerable puckering and contraction where the slough had taken place, and the parts had united; yet there did appear sufficient room for the feces to pass, and, but for the febrile attack, he might

* Med. and Phys. Journal.

have enjoyed ordinary health. The part that formed the intussusception, and which came off with the alvine discharge, together with part of the mesentery, and the alvine portion where the union had taken place, I thought worthy of some anatomical collection, and therefore took the liberty to send it to Sir A. Cooper."

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V. SURGERY.

Improvements in surgery are rapidly advancing: scarcely a month passes without some new and important discovery or invention, particularly in the severer operations. Sir Astley Cooper has been very successful, as we have seen, in removing vesical calculi, by dilating the urethra; and we have just had put into our hands the work of a younger candidate for honourable fame, in which a method is proposed of rendering the operation of lithotomy more easy, safe, and simple. The posterior operation, as Mr. Sleigh denominates his method, is an improvement on the recto-vesical operation of the continental surgeons, with which our readers are well acquainted. In none of the accounts which we have of the recto-vesical operation, is there any hint made, says Mr. Sleigh,—

"Of the operation through the intestinum rectum having been performed without dividing the sphincter ani muscle, and prostate gland, which alone constitute an essential difference between it, and the method proposed in this work; for in the first place, the division of the sphincter ani muscle (as practised in these cases) must vastly augment the sufferings of the patient, and contribute towards a tedious recovery: secondly, the division of the prostate gland can scarcely be accomplished without wounding one of the excretory ducts of the testicles and vesiculæ seminales; and, lastly, the passing of the urine through the wound, which could not be obviated in this method of operating, must, as in the lateral one, prevent the wound healing by the first intention (which, when practicable, is an important desideratum in almost all wounds,) and increase the hazard of callous edges, and a urinary fistula. Now, in the method proposed by the author, the sphincter ani muscle is not touched—nothing is divided but mere membranes, which, in a healthy condition, may be said to be *almost* insensible; the vasa deferentia can only be wounded, through the ignorance or awkwardness of the operator: and, lastly, there will be the same probability of the wound healing by the first intention (as the urine is not permitted to pass through it,) as a simple incision in any other part of the body."

Mr. Sleigh's *Posterior Operation of Lithotomy*.*—The part of the bladder which Mr. Sleigh divides, "is bounded laterally

* An Essay on an improved Method of cutting for Urinary Calculi; or, the Posterior operation of Lithotomy. By W. W. Sleigh, M. R. C., and Lecturer on Anatomy and Surgery in London, &c. pp. 104. 8vo. with a plate, Anderson, London, 1824.

by the vasa deferentia and vesiculæ seminales; superiorly by the *cul-de-sac* of the peritoneum; and inferiorly by the prostate gland, and the union of the seminal tubes," giving a base of one and a half inches, and a height of two inches. The instruments which he uses are an improved speculum ani or dilating forceps, and a staff with a scalpel seven inches long, and an inch and a quarter broad, protected by a sheath which is retracted during the operation by a spring. Lithotomy forceps of various sizes are employed in extracting the calculi, if not expelled after the incision.

"The state of the constitution having been regulated according to the directions in another part of the work, and an enema administered, the patient is put in the same situation as for the lateral operation. The speculum ani (having lain in a little warm water for some time previously, and then rubbed with a little sweet oil) should be gradually introduced into the rectum; the screw should then be slowly and steadily turned, by means of which its blades are separated, and the power of the sphincter ani muscle overcome. The anus thus opened to a sufficient extent* (transversely), the index finger of the left hand should be placed on the posterior edge of the prostate gland, which is the anterior boundary of the part of the bladder to be divided. The scalpel is then to be introduced, and by measuring the knife with the index finger, the length of our incision can be regulated with accuracy, according to our wishes. The staff having been previously introduced into the bladder, will be felt pressing the coats of the viscus against the intestinum rectum. This will be an infallible criterion by which we can judge of the situation for our incision, and of the nature of the substance interposed between the staff and our finger. We can then divide the parts directly on the staff, or by its side. Upon the incision being made, the urine will gush out, and in all probability the stone will be forced out at the same moment. Should the calculus not escape with the urine, the common forceps is to be introduced through the rectum into the bladder, and the stone extracted according to the principles given for the lateral operation.

"The bladder can be washed out by means of a syringe, with a little tepid water. After this, a gum elastic catheter, is to be introduced into the bladder through the urethra, and kept in till the adhesive process of inflammation commences, so as to unite the divided surfaces. The patient is to be given an anodyne, composed of about thirty or forty drops of the tincture of opium. He is then to be put to bed, and to be kept lying on his abdomen, till the time above mentioned for removing the catheter. The object I have in view for this last direction must be obvious, namely, to prevent the urine escaping through the incision into the intestine, which would necessarily retard the union of the parts. By observing the above plan another grand object is accomplished, that of preventing the urine insinuating itself into the cellular substance. In the natural position of the body, that is, lying on the back, the wounded part of the bladder would be the

* "We may safely dilate it from two to three inches in an adult."

most depending part; consequently, when the body is prone, the part alluded to is placed in the reverse position: the urine dribbling from the ureters will accumulate in the fundus of the bladder, and pass off by the natural channel through the catheter."

Mr. Sleigh, in the other parts of the work, mentions the objections to his method; the advantages of it over the lateral operation; the symptoms of vesical calculus; the preparatory regimen; the history of lithotomy, &c. He sums up the whole with the following conclusion:—

"First, The lateral or present method of operating for urinary calculi is (independent of the dangers to which it is *exposed*) invariably, and unavoidably, *from the very nature of the operation*, attended with three great inconveniences, viz. excruciating suffering (Cheselden)—the impossibility of the wound healing soon (Bell, &c.), it being necessarily kept open for a *length of time*;—and, lastly, the loss of much blood, the only one of the three that does not invariably occur.

"Secondly, The lateral operation is one, when performed, even by the most eminent men, extremely dangerous (Chelsden, Bell, &c.).

"Thirdly, The proposed operation (the posterior one) is attended with little or no pain; with very little loss of blood; and with the probability, in ninety-nine cases out of a hundred, of the cut being perfectly healed in forty-eight hours.

"Fourthly, These assertions are founded upon natural facts; the parts divided in this operation having been repeatedly wounded with the greatest impunity; and healed remarkably well.

"Fifthly, The objection, 'that the bladder, being frequently in a diseased state from the presence of a calculus, might prevent the healing immediately of the wound, and contribute much towards a fistulous communication between these viscera,' can be most satisfactorily answered; for while it is granted that the bladder is generally diseased while it contains a calculus, and that this might prevent the wound in the *coats of the bladder* directly healing; it is to be recollected, that there is something else *besides the coats of the bladder* divided in this operation, namely, the healthy intestinum rectum; so that the wound in the bladder healing *directly* is but of minor consideration, provided the incision in the intestine be immediately healed, or at least that the communication between the two viscera be obliterated, which is proved will be the case.

"Sixthly, That the lateral operation is extremely liable to certain dangers, viz. violent inflammation, extravasation of urine, and fatal hemorrhage; to which the posterior, or my method, cannot possibly be considered in the one-hundredth degree.

"Seventhly, Were there not even facts to corroborate this assertion, the nature of the parts divided in the two operations should be sufficient to convince any person acquainted with them, of its correctness.

"Eighthly, That the peritoneum being considered peculiarly favourable, or predisposed to extensive and fatal inflammation, is a doctrine founded upon an ancient prejudice, and without a single physiological or pathological fact to substantiate it.

"Ninthly, and lastly, That all the objections which have been hitherto advanced against the high operation, the apparatus major and minor, the Merean operation, cutting on the *gripe*, and the recto-vesical operation (as now practised on the continent), are all effectually obviated by the posterior one."

We think that Mr. Sleigh should have endeavoured to obtain a case or two, in which his method had been tried before he ventured to publish a book; and that he should have copied it out correctly before sending it to press, as we find many inaccuracies in the style. His proposal is certainly ingenious, even if it should not turn out so safe and practicable as he sanguinely hopes.

To render, however, his proposition perfectly intelligible he has given an engraving of the part to be operated upon, with which he has kindly favoured us, and it will be found as a frontispiece to our present number. The following is

The Explanation of the Plate.

A. The Bladder.
B. The Calculus.
C. The Intestinum Rectum.
D. The coats of the Bladder and Rectum in contact, and the part which is divided in this Operation.
E. The Sphincter-Ani Muscle.
F. The Speculum Ani, or Dilator.
G. The Staff.
H. The Prostate Gland.
I. The Bulb of the Urethra.
K. The Scalpel.
L. The Cul-de-sac of the Peritoneum.

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Mr. Shaw, of the Anatomical Theatre, Great Windmill street, continues his indefatigable investigations, and has just published a work on the distortions of the spine,* the analysis of which as the accompanying plates are not yet published, we shall reserve for our next number.

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The following extract, from an American Medical Journal, will show the spirited exertions which are there making after improvement. The communication seems to be drawn up by an admiring pnpil.

Mode of teaching Surgery. By Professor Gibson, *of the University of Pennsylvania*,†—"In treating of gun-shot wounds, he illustrates all that is said by showing us the character of such injuries by shooting at the different parts of the subject, tracing the ball, and exhibiting the peculiarities of the wound to the class. The superiority of this mode over that of simply *talking* on the subject is at once evident to all.

* On the Nature and Treatment of Distortions, to which the Spine and Bones of the chest are subject, &c. By John Shaw, surgeon, &c. 8vo. London, 1823.
† Philadelphia Journal.

"He does not content himself with giving us abstract notions of *dislocations*, by merely showing the dry bones displaced, but by having the joints opened and dividing the ligaments, he displaces the bones in the various ways that we know to result from accident. Thus it has nearly the exact appearance that the real injury would present, and we understand with facility the operations necessary to reduction.

"In explaining the diseases of the eye, the class are assisted by highly magnified and beautifully coloured paintings, on a scale of two feet to each eye. The diseases of the antrum and nose are made plain by numerous drawings of the structure of the parts, as well as of the appearance of the diseases.

"The subject of hernia is elucidated by immensely magnified and splendid paintings in oil, made from dissections for the purpose. This renders the ideas of the student at once clear and correct, as at the same time the disease is *imitated* on the dead subject by forming the tumour and sack, and the operation exhibited for its reduction. In a similar manner hemorrhoids, fistula in ano, hydrocele, scirrhous testicle, and diseases of the urethra, are all imitated on the subject, and explained by the aid of magnified paintings. *Lithotomy, amputation*, and, in short, every operation in surgery, is thus made plain to the class, by a multitude of ingenious contrivances, and at a very considerable expense. As you have seen the splendid collection of wax models, made by Professor Gibson himself, it is unnecessary to repeat to you that they are beautifully correct, and of great value to the student.

"There is one improvement of his, which deserves particular mention, as it is of a very singular and highly instructive character. This is, the frequent introduction of the living subject, on whom a great many operations are performed; such as washing out the stomach, as in cases of poisoning, by means of the gum elastic tube and syringe, the introduction of *Anel's* probe into the *puncta lacrymalia*, and of the catheter into the bladder, &c., all of which, as they are to be performed on the living subject, are only to be understood when performed in this way. The class are under considerable obligations to this indefatigable teacher, for after giving us an opportunity of seeing him operate on private patients, others from the Alms-House are frequently introduced to exhibit certain diseases, or their effects on the system.

"During the winter he delivers a course of clinical surgery, at the Alms-House, where patients are brought into the area of the operating room, the peculiarities of their cases described, and operations performed when requisite. Sometimes they are brought in on their beds, which enables all the pupils to see, without subjecting the patient to the inconvenience of a crowd immediately around his bed. This plan is also his, and he deserves our gratitude for the steadiness of his exertions for our benefit. He has performed the operation of lithotomy, three times in the Alms-House within a few months, with entire success; and in all, we have seen upwards of *thirty* operations by him this winter. The class in attendance at the Alms-House during this session, has been two hundred and fifty; heretofore it has

never exceeded sixty. It is not difficult to foresee, that in succeeding winters this class will become very much larger."

On Leeches. By Dr. Rees Price.—"Leeches should not be much handled prior to their application. If the weather be cold they are liable to become torpid, and should be warmed by breathing on them. Leeches may be applied by means of a wine or cupping glass. It is useful, in either case, to put a piece of stiff paper to the bottom of the glass, to which they are otherwise apt to retire; or, if they are required on a particular spot, a small glass tube, four or five inches long, and just large enough to admit the body of the leech, may be employed. If the leech remains torpid during the process of sanguisuction, a drop or two of cold water sprinkled on it will arouse it again into action. The best methods of suppressing hæmorrhage, which sometimes succeeds to their application, and is occasionally very troublesome, when all the simple means, such as felt, starch, puff-ball, &c. have failed, are to apply the spirits of turpentine, or the muriated tincture of iron; or, in failure of these, to insert a piece of lunar caustic (the point being scraped very fine), into the puncture; or, lastly, a weak solution of tartarized antimony has lately been recommended as very efficacious. Dr. Price says, that, in order to preserve the leeches, they should be suffered to retain the blood, and merely be thrown into a jar of fresh water. In the course of a month or two, they will become firm and healthy, and able to perform their functions again; but, if the time cannot be spared for their recovery, he prefers what is called *stripping them*, to making them disgorge the blood by means of salt. It seems that if the blood is carefully squeezed from the leech, it is capable of resuming its functions immediately."

On Scorbutus attending Fractures. By J. Cloquet.*—Occasionally, during the process of consolidation of fractures, all the symptoms which characterize the last stage of scurvy develope themselves in the fractured limb, and arrest, for a long time, or even entirely prevent, the cure of the fracture. This troublesome complication is sometimes a purely local affection; at other times it first manifests itself in the fractured limb, and afterwards extends to the other organs of the body. The local scorbutis of which M. Cloquet treats, would appear to be produced by debilitating causes, acting directly on the fractured limb, or even in a general manner on the system. In order to prevent this affection, M. Cloquet considers it necessary, in fractures complicated with inflammation, to be very cautious as regards blood-letting; not to continue emollient applications longer than is absolutely necessary for allaying the inflammation, and after this period to dress the patient with linen, very dry and moderately tight. When the symptoms of local scorbutus have manifested themselves, the attention must be redoubled, tonics and stimulants administered, and, in short, all other

* Medico Chirurg. Rev.

means proper for obviating the scorbutus employed. It is also very useful, at each dressing, to leave the limb exposed to the air, and especially to the rays of the sun, for some time.

Acupuncturation in Tetanic Trismus. By F. Finch, of Greenwich.*—"In the course of the last month, a highly respectable neighbouring practitioner (Mr. Bromley, of Deptford,) informed me that he was attending a patient who had fallen from a considerable height, and had received several extensive lacerated wounds on various parts of the body and scalp, and that he despaired of his recovery, in consequence of trismus, &c. having taken place, and destroyed all power of deglutition. I intimated to Mr. Bromley, that, if the case were mine, I should try the effect of acupuncturation, and was permitted to accompany him to the patient's house. The patient was in a most distressing situation, with the pulse of 130; the jaw completely locked; and, from the extreme rigidity of the muscles about the throat, he was incapable of swallowing the smallest quantity of fluid. Having obtained permission to employ the needles, I introduced one into the masseter muscle of the right side, and was much gratified to find that muscle, as well as the sterno-cleido-mastoideus, platysma myoides, and all the muscles of the neck and throat of that side, instantaneously relieved from their spasmodic contraction. Another needle was then introduced into the left masseter, and relief (though not to the same extent) was immediately afforded. Such was the effect of the operation, that before we left the room the patient took a large dose of tinct. opii. and a cup of chocolate, although he had been unable to swallow any thing for some considerable time before. He is now perfectly recovered."

Buchanan's *Acoustic Surgery.*†—We have seldom need to animadvert on the size of books, but we think this one requires to be noted as the most unwieldy, ill got up book we have lately seen. The thirty-eight folio pages would have easily come into one of the sheets of this Journal; and the reader has accordingly, about sixpenny-worth of letter press for twelve and sixpence. The "Engraved Representation," as it is quaintly called, is a step below what has been already published of this kind, particularly a very lady-like one by J. H. Curtis, Esq. Aurist to the King, equally fit for the surgery and the boudoir. We shall give one extract from Mr. Buchanan's work.

On introducing the Probe and Catheter into the Eustachian Tube by the Nostril.—"Before you attempt to introduce the probe or catheter through the nostril into the Eustachian tube, it would be advisable to make the experiment on the dried preparation, and then, if possible, on the recent subject, when you could give it the necessary curvature preparatory to its introduction into the *living subject.*

* Medical Repository.

† An Engraved Representation of the Anatomy of the Human Ear, &c. with surgical Remarks, on introducing the Probe and Catheter into the Eustachian Tube by the Nostril, &c. By T. Buchanan, C. M. &c. pp. 38, folio. Hull, 1823. Price 12s. 6d. boards.

"The experiment ought to be made on the same nostril and ear of the preparation or recent subject, as that on which you intend to operate. When the probe is just entering the mouth of the tube, the operator ought to mark it slightly in a line with the top of the nose, and from this mark measure off the length of the tube outwards, and mark it likewise. These measurements will be of great use when you operate.

"It would likewise be advisable to keep several probes ready curved and marked, some for the *right* and others for the *left* ear; and they should be of various assortments, to suit the age or size of the head of the patient. The great difficulty of introducing the probe into the Eustachian tube through the nostril, is the excessive irritability of the Schneiderian membrane with which it is lined.

"To overcome the disagreeable sensation produced by the introduction of foreign substances, it might be advisable to inject tepid water into the nostril, and at the same time dip the probe into ol. amygd. warmed to the temperature of the blood. I have used this mode frequently with great success, causing little or no irritation to the patient.

"Having got the patient seated conveniently, introduce the probe into the nostril, and when you approach with the first mark towards the tip of the nose, cautiously endeavour to find the mouth of the tube, by directing the knob on the end of the probe outwards, and rather upwards, until it has entered the labia.

"Having entered the tube, observe the distance of the second mark, and proceed in the same manner until it is in a line with the tip of the nose, and feeling no resistance made to the probe, you may conclude that it has entered the tympanum.

"But beware of farther introduction; for by rashly pushing the probe into the tympanum, you might injure the mechanism of the ossicula odditus, which besides putting your patient to great pain would throw discredit on the operation.

"If you wish to inject tepid water into the tympanum, provide a slender silver catheter, marked and curved similar to the probe, which should not exceed in diameter from the point to the first mark, that of the diameter of the knob of the probe.

"It should gradually increase in size from the first mark for about a quarter of an inch in length, to the thickness of a crow quill, and then be of an equal diameter to the end. This equal portion of the catheter to be made with a male screw on the outside, to fit a round flat piece of silver with a female screw in its centre.

"This flat piece of silver, which has been called a frontier, ought to have five or six holes in its edges, so that it may be secured in a proper position by means of a ribbon passed round the head and through two of the holes of the frontlet, the ends of the ribbon to be then brought backwards and tied behind; or an assistant might prevent the catheter from slipping into the tympanum, and at the same time secure the head of the patient during the operation."

Successful Ligature of the External Iliac Artery. By Dr. J. C. Warren, of Massachusetts.*—"In this case the aneurismal tumour

* New England Journal.

was large, and extended upward into the cavity of the abdomen. When the muscles had been divided, and the abdominal cavity opened, the aneurism was seen rising so high as to conceal the iliac artery. From the anterior and inner part of the sac arose the epigastric, giving origin to the obturator artery, both of them greatly enlarged: the epigastric trunk being equal to the common size of the brachial. From the outer part of the sac arose the circumflexa ilii, which was also considerably enlarged. The epigastric interfered greatly with the necessary dissection of the great artery; the iliac was exposed higher than usual; and the ligature passed round it without difficulty. The event of this operation was favourable. The limb never lost its warmth, sensation, or motion. The patient was restrained to his bed with difficulty, until the ligature had separated: on the nineteenth day he was permitted to rise; on the following days he walked about, and afterwards rapidly recovered."

Ligature of the Subclavian Artery. By Mr. Wishart.*—"We have the satisfaction of announcing, that, in the Royal Infirmary of Edinburgh, the left subclavian artery was included in a ligature, by Mr. Wishart, on the 23d of August last, and hitherto there is every prospect of success. The subject of operation was a man of forty-seven years of age, by trade a porter. He had a large aneurismal tumour situate under the left pectoral muscle, and in close contact with the clavicle, attended with considerable pain and swelling of the corresponding arm. The time occupied in the operation, and in dressing the patient, was about twenty-one minutes. Three small arterial twigs were cut in the first incisions, which were immediately secured by ligature; but there was no venous hemorrhage, and the patient did not lose above a table-spoonful of blood during the whole operation. The ligature, consisting of two threads, was placed round the subclavian artery, immediately after it had passed through the scalenus muscle, and close by the tubercle of the first rib. Two of the nerves, which go to form the axillary plexus, were distinctly exposed; but neither the subclavian vein nor artery was seen. The artery lay deep in the wound; but it was readily embraced with the ligature, by means of the common aneurismal needle. No mechanical contrivances were required to tighten the ligature, as this was easily effected by the fingers.

"As soon as the ligature was tightened, all pulsation in the tumour ceased. In the course of the day, the patient complained of numbness in the arm and hand; but the heat of the limb never sunk below the natural temperature. The aneurism gradually diminished in size, and the pain and general swelling of the limb daily subsided. On the 10th day after the operation, pulsation could be felt in the brachial artery; on the 16th day, the ligature on the subclavian came away; on the 17th, the pulse in the aneurismal arm was distinct at the wrist; and this day, the 18th from the operation, every circumstance is favourable."

On the Actual Cautery in Sinuses and Fistulous Sores. By

* Edinburgh Medical and Surgical Journal.

Dr. Smith, of Vermont, America.*—This seems to us a case of some interest. A labourer gave himself by accident a bad cut with his axe on the inside of the knee joint; and by bad medical treatment the joint was in the end left anchylosed, a deep-seated sinus with a fistulous opening remaining beneath the external muscles. Bandages and compresses were tried in vain; and at length Dr. Smith resolved upon cutting down to the abscess; but this was equally unsuccessful, as the wound speedily put on an unhealthy aspect.

"The poor man was now just where I had found him, except that he had lost much confidence in his surgeons, and was in utter despair of being relieved of his loathsome disease. The circumstances under which he became my patient were such, as made me extremely anxious to restore him to health. I happened about that time to meet with a case in the London Medico-Chirurgical Journal, in which the actual cautery had been employed. I immediately suggested the use of it to my patient, endeavouring to acquaint him with the manner in which it would operate, and related to him the case which I had read. He finally complied with my wishes, at the same time assuring me, that should this fail, it should be the last attempt. I procured an iron cylinder of three quarters of an inch in diameter, flattened at the end. This was heated to whiteness, and applied in two places over the sinus, and held upon the part for some seconds. It destroyed the skin, and excited an inflammatory blush upon the surface of the limb. From that day the aspect of the disease was changed, and in a week from that time, I had the satisfaction of dismissing the young man perfectly well, adhesion having taken place throughout the parietes of the sinus.

"I think I have never witnessed, in surgical practice, the application of a remedy, the result of which was more unequivocal or speedy. The event of the case has led me to inquire, whether we might not use the cautery, not only in diseases of a local nature, but also in general diseases, connected with or dependent upon local affections, where there is needed a remedy which will act with promptitude and energy. What, for instance, would be the effect of its application, along the spine, in tetanus?"

The actual cautery is, in ordinary cases, a terrific remedy to the patient, but is most certainly often a powerful and unique one, and cannot be more painful than the potential cautery by argentum nitratum or potassa cum calce.

Acupuncturation in Rheumatism. By Dr. Carter, of Canterbury.†—"Isaac Terry, who was troubled with sciatica, underwent this operation, and the relief which it afforded him, though unfortunately not permanent, was striking. The needles were passed May 9th—the pain was almost immediately removed, the stiffness only of the affected part remained. The patient walked four miles with ease. The pain, however, returned on the 15th. The operation was repeated once and again, and both times with marked relief. The re-

* Chapman's Journal. † Medical Repository.

lief, however, as I have before said, was not permanent; perhaps owing to the man's living exposed to cold and wet, and being obliged to work very hard. He afterwards, however, got nearly well by means of the warm bath and colchicum.

"Another patient, Mary Pattison, a middle-aged woman, had been long suffering from rheumatic pain of the arm and hand. A variety of remedies had been tried, but to no purpose. Acupuncture was here of decided efficacy. It certainly removed the pains from the parts to which it was first applied; and the patient, at her own earnest request, had the needles passed into the hand and fingers several times, and, if her statement is to be credited, the operation put the disease to flight. She was discharged some time back, and I have not heard of her since.

"I have employed acupuncture in several other cases; sometimes with considerable success, but I must confess, more often without benefit to the patient. Upon the whole, however, I am inclined to look upon it as a remedy worthy attention. Discrimination, as Mr. Churchill has said, is necessary in employing it, and it may be that I have occasionally resorted to it in cases to which it was not exactly applicable. When a novel remedy is brought forward, how prone we are to exhibit it without due discrimination!"

Taliacotian Operation. By Mr. Travers, of St. Thomas's Hospital.—This operation was performed about a month ago, upon a man aged 34 years, who had lost his nose within the last year from taking large quantities of mercury. Mr. Travers first removed the diseased parts, and pared the edges of the old nose, where it was intended to join the new one. The operator, with a pen and ink, sketched the outline of a nose upon the skin upon the patient's forehead, which he next proceeded to separate with his knife (in the lines he had drawn) from the surrounding parts, leaving, however, the piece at the bottom of the flap, between the eyebrows, undivided.

The piece of skin thus cut out, was *twisted* round, and laid over the site of the old nose, so as to bring the inner *raw* surface in contact with it. Mr. Travers now exercised his ingenuity in modelling with this loose piece of integument the best nose he could, which was confined to the parts adjacent, by five stitches, and some strips of sticking plaster. Two small rolls of lint were put into the new nose to support its convexity, and *to form nostrils;* and a compress was put on the upper part, where the integument was twisted. The place in the forehead whence the new nose had been taken, was dressed with simple ointment, with sticking plaster, and left to nature to be filled up. Notwithstanding the operation was exceedingly well performed, some fears are at present entertained of its success, as one half of the new nose has lost its vitality; should it be ultimately necessary to make a new side to it, it is intended to cut it from the neighbouring cheek.

VI. PRACTICE OF PHYSIC.

We are sorry to say, that while progress is rapidly making in almost every department of the medical sciences, the practice

of physic is nearly at a stand. We hear, indeed, of scientific practice, and empirical practice, but it is but seldom, we fear, that the distinction can be drawn; and while surgery is daily acquiring fixed scientific principles, physicians are either remaining stationary, or trying most empirically all sorts of new remedies, whose power can be made most manifest. The French pathologists, and their imitators in England, think they are making wonderful strides, when, in fact, they are more empirical in their dissections than ever were the most ignorant prescribers, who know nothing of the appearances after death of inflammation or morbid læsion. We press this most seriously upon our English readers, to prevent them being carried away from what we fear not to call practical empiricism established by the experience of centuries, and led, by the absurd Frenchified system now vigorously attempted to be palmed upon them, to follow a rash and experimental empiricism, which can only endanger their patients, and disgrace the profession. The most recent work which we have to notice in this department is

Dr. Shearman *on Chronic Debility and Indigestion.**—We had almost determined, when we saw the title of this work in the advertisement, not to take any notice of it, as it appeared to be a popular rather than a professional book. On looking into the work, however, we were surprised to find Dr. Shearman engaged in technical discussions concerning life, and the agents by which its powers are exhausted, conceived in a style which no popular reader could understand; and we must therefore conclude that he designed the book solely for the profession. At the very first glance, we have to complain that Dr. Shearman has not taken the trouble to make any obvious division of his subject, and we have neither contents nor index to guide us in discovering his sentiments on any of the multifarious topics which he has seen meet to introduce, without hunting over the book paragraph by paragraph. To read the work, we found to be rather irksome, from the constant occurrence of the term "life," or others equally indefinite, with which the pages are most plentifully bestrewed. We anticipated as much indeed from the preface, where he thinks it incumbent upon him to give his creed of spiritualism, and his disbelief of materialism, though as much out of place, as it appears to us in a work on debility, as Mr. Bingham's metaphysical essay on vision, in the introduction to his book on urinary diseases. We are sorry we cannot compliment Dr. Shearman either on the originality or

* Observations illustrative of the History and Treatment of Chronic Debility, the prolific source of Indigestion, Spasmodic Diseases, and various Nervous Affections. By William Shearman, M. D., &c., pp. 225. 8vo. Underwood, London, 1824.

the valuableness of his remarks; for we seldom have met with medical common-places, in a dress so little winning as the present. We shall take a single extract for a specimen of his manner, where the book chances to open.

"Among the medicines employed as sedatives, with a view of taking off the morbid contraction of the blood-vessels, perhaps no one is more entitled to commendation than sarsaparilla. When the morbid contraction has been produced by the action of stimuli, as when mercury or guiacum has been long administered, the substance may be given with great advantage; and in those cases wherein the morbid state of the vessels arises from the influence of local disease, as in hectic fever from pulmonary affection, this medicine is productive of considerable benefit. Some difficulty has hitherto been experienced in obtaining its virtues in a sufficiently manageable state; but the preparations lately offered to the public appear to obviate this objection.

"It might at first view be supposed, that in cases of chronic debility, attended with morbid contraction of the blood-vessels, relaxant medicines, as antimony, &c., would be given with advantage, but this is by no means the case. The relaxant effects of this class are chiefly exerted upon the capillary vessels, and the balance of circulation is thereby thrown upon the surface; consequently the large internal vessels being emptied to a still greater degree, a larger expenditure of *living power* is requisite in contracting [*to contract*] them upon their contents, and the debility is thus augmented." Page 185.

On the Uses of Iodine. By Dr. Gunther, of Cologne.*—"Iodine has for some time past been frequently employed by the medical practitioners of this place, particularly among the inhabitants of a mountainous district of country, situated a few miles from Cologne, where a considerable number of cases of goitre are met with. I have, along with others, tried its medical effects, particularly in the cases of two sisters, the one sixteen, the other eighteen years old; the former of whom was affected with a small tumour of the bronchocele kind, about the size of a pigeon's egg, situated in the neighbourhood of the thyroid gland; the other had a chronic tumour of much greater magnitude, situated on the left side of the neck: the swellings in both instances were hard, and quite free from pain. After the use of the iodine for a fortnight, considerable diminution in the size of the tumours was already observed. During that time the patients had only employed the Ungt. Hydriodin. made thus:—℞. Axung. porc. ℥jss. et Kali Hydriodinicum, ℥ss. M. et fiat ungt. Of this ointment about the size of a hazel-nut was rubbed in on the swelling every evening; the iodine not being exhibited at all internally. At the present moment they still continue the use of the ointment; and I do not in the slightest degree doubt but that the tumours will be discussed without leaving the smallest trace of them since they are already of very inconsiderable size. During the employment of this application, the patients were not affected with any particular symptom, with the exception of the younger of the two, who about the sixth day after she

* Medicinish Chirurgische Zeitung.

began the application, complained of slight pains in the tumour; but these entirely disappeared in two days afterwards, the use of the ointment remaining uninterrupted. Since then they have not returned."

On Emetics, as counteracting Salivation. By Dr. Chapman, of Philadelphia.*—"It is a fact, with which we have long been acquainted, that active evacuations of the alimentary canal, are the very best means of awakening susceptibility to the impression of mercury. Even a small portion of ipecacuanha with calomel, so as scarcely to excite nausea, we have found sometimes to produce salivation when the latter article alone had proved ineffectual. The apparent contradiction which here occurs may, perhaps, be reconciled on the established principle, that remedies in different states of the system are productive of opposite effects. We have for many years entertained the well weighed opinion, the result of much inquiry and observation, that the primary operation of mercury is on the stomach, and that, however administered, that organ, either by *direct* or *indirect* sympathy is put into a condition, of which the salivary glands, and all other parts of the system, participate. The present is not the occasion to bring forward the facts and experiments which warrant such a conclusion; but we shall hereafter do it, and we think, in a shape that cannot fail to silence all cavil and disputation on this point, among reasonable and unprejudiced men.

"During the last autumn, Dr. Richard Field, of Petersburg, Virginia, in treating one of his patients for a profuse hemorrhage of the bowels, brought on by the inordinate action of calomel, with his favourite prescription, consisting of opium, ipecacuanha and sugar of lead, gave the remedy in rather larger doses, and the stomach being extremely irritable, violent vomiting was excited. The patient at the time was labouring under a most profuse salivation, amounting even to sloughing of the mouth and fauces. The hemorrhage was soon suppressed, (an instance illustrative of the utility of vomiting in hemorrhage,) and with an almost simultaneous arrestation of the mercurial affection.

"Having a mind always susceptible of improvement, and of unbounded zeal in his profession, Dr. Field determined to profit by the hint thus given, and was induced to make a farther trial of the remedy in some other violent cases of salivation then under his care, and which had resisted the usual mode of treatment. The effects of the plan were not less beneficial than in the first instance.

"Not long after this, I happened to be in Petersburg, and meeting with Dr. Field, he informed me of the decided advantage which he had derived from emetics under such circumstances, and assured me he had not been disappointed in a solitary instance, referring me to several other respectable practitioners of the town, who, he said, would bear ample testimony to the efficacy of the practice. I was then requested to inform my preceptor, who was once a pupil of Dr. Field, on my return to the country, of the circumstance, and which I accordingly did. Confiding in every thing coming from Dr. Field, my preceptor immediately made a very extensive trial of the remedy, and in a short time was enabled to corroborate all that had been previously said in favour of it.

* Philadelphia Journal.

"On the whole, from what I have myself seen of the utility of emetics in arresting inordinate salivation, and the gangrene resulting from it, I think I am warranted in pronouncing the practice a most important medical improvement."

On Tar as counteracting Salivation. By Dr. Kruger-Hausen, of Gostrow.*—"This author has given an account of a man who, during a state of excessive salivation, attended with hæmorrhage from the gums, had employed the usual astringent gargles without benefit; who afterwards covered his tongue and inside of his mouth and fauces with tar, by means of a brush. He soon afterwards recovered, without any other remedy. Dr. K. has since employed the same means in several cases, with the effect of quickly removing this disagreeable consequence of medical treatment, without any inconvenience resulting from this new method."

Opium dissolved in Nitric Acid for Hectic Fever. By Dr. Harrison, of Kentucky.†—"We have employed, says Dr. Harrison, opium dissolved in nitric acid, which is decidedly and eminently beneficial in hectic fever. One drachm of opium is dissolved in one ounce of nitric acid, in an open vessel, to allow the nitrous fumes, which are disengaged, to escape. According to the condition of the system, we give twenty, thirty, or forty drops, three times a day. When it manifests an action too predominantly narcotic, we diminish the quantity of the opium. But a sufficient quantity of opium must be dissolved, so as to calm the hectic irritation, at the same time the accompanying acid imparts strength. We have witnessed one case of entire recovery with this combination when nitre acid alone, mercury to a ptyalism, opium, &c. were tried with little benefit. Even in cases, where the prospect was clouded by the shadows of death, life was evidently prolonged, and the passage rendered more smooth and gentle, by its administration."

On Diabetes Mellitus. By Dr. Heineken, of Madeira.‡—The patient, in the case given by Dr. Heineken, was passing eight or ten quarts of urine daily, of a saccharine quality, and had the usual symptoms of diabetes. The following pills were ordered:—

℞ pulv. scammon. ℈j.
pulv. opii. ℈j.
hydr. submur. gr. v.
ant. tart. gr. ij.

To be made into twelve pills to be taken three times a day.

A warm bath every night—the chest, arms, and abdomen, to be rubbed well with sweet oil every morning. The food to be entirely animal. This treatment, with little variation, was continued from the 3d of June to the 17th of July, when it was noted that the patient perspires freely—that the urine is healthy—that the quantity is about three quarts daily. A nearly similar mode of treatment, however, was continued till the 8th of October, when he was considered as cured. The quantity of

* Revue Medical. † Philadelphia Journal. ‡ Medical Repository.

solid opium taken during the treatment was about six hundred grains; and during eight days of that time, he took fifteen grains daily.

Neuralgia, or Tic Douloureux, treated with Carbonate of Iron. By Dr. Crawford, of Bath.*—"Dr. Crawford, of Bath, has communicated the particulars of two cases of neuralgia treated with the remedy in question—one in his own practice, the other in that of Dr. Davis, of Bath. The first case was that of a lady who became affected in the left side of her face at the age of 69 years. The disease was moderate at first, and the intervals between the paroxysms of considerable extent; but after some time the disease became greatly exasperated, and the cessations from suffering of short duration. The complaint was subdued by the arsenical solution, and the patient remained free from suffering for two years. Then a slight relapse, and again relief for four years by the same remedy. At the end of this period the enemy renewed his attacks, but arsenic no longer availed. Dr. Crawford then commenced with carbonate of iron in scruple doses three times a day, gradually increasing the dose to a drachm. In three weeks from the commencement of this plan of treatment the disease gave way, and has not yet returned."

"Dr. Davis's patient was also a female, 65 years of age, affected with the disease in the right side of the face. She was cured by the carbonate of iron in a fortnight—two scruples night and morning.

"Mr. Thomson, of Sloane street, has communicated to Mr. Hutchinson the particulars of some cases which are in favour of the remedy. We sincerely hope it may retain the reputation it has already acquired."

Neuralgia, treated with the Oil of Turpentine. By M. Sedillot.†—M. Sedillot, in the name of M. Laroche, read a Memoir on the good effects of the oil of turpentine in *sciatic neuralgia.* The author administered this substance in the dose of a drachm to an ounce of syrup. In several individuals, the cure was speedy and complete, whilst in others a relapse took place; in all, however, relief was experienced. In some, a copious perspiration preceded the appearance of neuralgia.

On the Use of Prussic Acid. By Dr. Macleod.‡—"One of the most distressing symptoms attending dyspepsia is uneasiness in the chest, with occasional fits of palpitation, sometimes assuming the more severe character of angina pectoris. On the other hand, in primary organic diseases of the heart, we very frequently find many of the most troublesome symptoms of dyspepsia, particularly flatulence; and such cases, although not altogether dependent on the state of the stomach, are nevertheless much aggravated by its derangement. Now, in such instances of morbid action of the heart brought on by dyspepsia, or of dyspepsia sympathetic of organic disease of the heart, I am inclined to think that much benefit is to be obtained from the employment of prussic acid. That, in the latter class of cases it can for a moment retard the progress of organic mischief, I would by no

* Medical and Physical Journal. † Medico-Chirurgical Review.
‡ Revue Medicale.

means wish to imply, but, after a fair trial, I have been led to believe that it may palliate the sufferings of the patient, although it cannot cure the disease. In a case to which I alluded on a former occasion, the relief afforded was of the most unequivocal kind, although other remedies had failed to produce even temporary benefit. This patient died soon after, and the heart was found to be very considerably enlarged, and extremely soft.

"A short time after the occurrence of this case, a patient applied to me, who laboured under well-marked symptoms of enlargement of the heart, attended with considerable pain and palpitation of this organ. He was dyspeptic. I prescribed ten drops of prussic acid in a five ounce mixture, of which he began by taking two table-spoonfuls three times a-day, gradually increased till he took the whole of the mixture in twenty-four hours. After a few days the symptoms began to yield, and he became much more comfortable. Having persevered in his medicine for about a fortnight, he discontinued his attendance, and I saw nothing of him for several months. The only perceptible effect from the medicine was the improvement in his general state of health, and diminution of the violence of the action of the heart: he was less subject to fits of palpitation, but I could not perceive that, in the intervals, the number of pulsations (averaging from seventy-five to eighty-five) was diminished. After some months, this patient returned with symptoms analogous to those above described, and, without waiting to be examined, asked for *the medicine:* he took it a second time, with similar benefit. From this period, the intervals during which he was able to omit the use of the prussic acid gradually diminished in proportion as the organic derangement increased: notwithstanding this, however, it continued to afford relief until within a few weeks of his death, which did not take place for two years from the time of his falling under my notice. He had tried a variety of medicines, without obtaining any benefit, before he had recourse to the prussic acid; and, after this failed to afford relief, no other remedy was of the slightest avail. An opportunity presented itself of examining the body of this patient, who was under thirty-five at the time of his death: the only appearances worthy of note were great enlargement of the heart, with ossification of the mitral valves, and of those at the root of the aorta.

"This is the second case in which I have seen prussic acid afford relief in derangement of the functions of the heart, which has been proved by the dissection to have originated in organic disease. I have likewise given it in many cases of palpitation, and other unpleasant symptoms referred to the region of the heart, where these have appeared to depend on dyspepsia, and generally with a considerable advantage."

Case of Diabetes. By Dr. Carter.†—This case is important as tending to confirm the experiments of Dr. Marsh. Dr. Carter's patient was aged 33, a day labourer. The symptoms of the case were not very aggravated, the liquid egesta never

† Medical Repository.

amounting to more than nine pints in twenty-four hours, and their excess over the ingestia never more than four pints a-day.

"About the middle of March he caught cold, and the quantity of urine was again greatly increased. On the 4th of April the diabetes suddenly ceased, without any assignable cause, and distressing strangury ensued. This soon yielded to tinct. ferri muriatis, and an opium pill at night, and the urine became again sweet and too copious. About this time the third volume of the Dublin Hospital Reports fell into my hands, and Dr. Marsh's paper on diabetes of course attracted my attention forcibly. His recommendation of opium is not new:* it was his statement respecting the warm bath, and the exciting of profuse perspiration by hard labour, that attracted me. I determined to give both a trial in the present case. The warm bath, both simply and with tinct. opii, caused excessive sickness and languor, and the patient could not be persuaded to continue it. Hard work, aided by warm clothing, and a scruple of Dover's powder at night, entirely removed the disease. At the beginning of June he was *quite well*, and left off medicine, and on the 13th he was discharged.

"I feel perfectly satisfied that Smith was free from diabetes when he left the hospital, and I cannot but ascribe the removal of the complaint to the profuse perspiration induced chiefly by hard labour and warm clothing. Since his dismissal the disease has, I understand, returned, owing, I dare say, to irregular living; but the man has not applied to me. This does no discredit to the treatment which succeeded while he was under my observation, and should by no means shake our confidence in the plan proposed in Dr. Marsh's excellent paper."

Tetanus, treated with Oil of Turpentine. By B. Hutchinson.†—Mr. Hutchinson has stated a case of tetanus occurring without any evident cause, in a man long afflicted with epileptic attacks. He was a prisoner in the Nottinghamshire House of Correction. Mr. Hutchinson finding, on his visit one morning, that the patient presented most of the usual phenomena of tetanus, he abstracted thirty ounces of blood, and exhibited fifteen grains of calomel and two grains of opium. Next was administered a brisk purgative enema, containing one ounce of the oleum terebinthinæ, while a blister was applied to the back. The enema taking no effect, half an ounce of turpentine was ordered by the mouth every two hours. Next morning our author was agreeably surprised to find that the patient could open his mouth, and that the whole of the tetanic symptoms were dispersed. He had taken, in all, two ounces of the turpentine, which freely evacuated his bowels. We would hint our suspicion that the case was not one of real tetanus, from the great facility with which the symptoms gave way. However

* "See cases recorded in Vol. IV. of the Medical Transactions of the London College of Physicians, by Dr. Warren."

† Medical and Physical Journal.

this may be, we have nothing to object to the mode of treatment employed.

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VII. MIDWIFERY.

There is but little new in this department. Dr. Power has republished his Treatise on Midwifery, developing *new principles*, namely, stroking and similar handlements (we are forced to coin a term), applied to the abdomen during parturition. In a former series of this Journal, we advised Dr. Power to lay aside this foolery, and keep to the beaten path—"but he would none of our counsel."—Let him take the consequences.

Dr. Conquest has published a third edition of his useful and successful little work, the Outlines of Midwifery,* to which we observe he has made several additions, and amongst others an arranged list of books and papers on midwifery, which may be consulted or studied with advantage. We must say, however, that this list does not appear to be drawn up with much discrimination.

We observe that he has taken the advice we tendered to him in our first series, by leaving out his very objectionable personalities and insinuations against his brother practitioners. But the "*mournful* series of portraits," as he cantingly expresses himself, still stands, though without his former ill-natured addition of—"every one of which is drawn from a living character." As we think there are many important hints in this same "mournful series," we shall here extract it for our readers:—

"Within the whole range of obstetric science, there is nothing which so much distinguishes the judicious practitioner from the man who disgraces medicine, as the management of *protracted labours*. One man, by incessant meddling, produces rigidity of parts, and even inflames the os uteri, so that his patient through his folly shall suffer from a most painful and protracted labour.

"Another officiously interferes with the beautifully simple and admirably adapted process of nature; and presumes, that by rupturing the membranes as soon as he can detect them, or by using his lever upon lever principles, by which many women are rendered wretched for life, he shall accelerate parturition.

"A third urges his patient to be constantly taking stimulants, such as wine and spirits, or to employ voluntary exertions, by desiring her to hold in her breath and force down; whilst the os uteri is not dilated half enough to permit the head to pass through, and the consequence is, that the woman becomes so exhausted by useless exertions, that

* Outlines of Midwifery, developing its Principles and Practice, intended as a text book for Students, and a book of reference for Junior Practitioners. By J. T. Conquest, M.D. F.L.S. pp. 224. 12mo. plates. Anderson, London, 1823.

she at last has not power enough to expel the child, and instruments must be had recourse to.

"Another practitioner allows the head to remain for hours and days of laborious parturition, in a position which will never permit it to pass through the pelvis, until the mother is worn out by fruitless efforts; though the mal-position might have been rectified at the commencement of labour without difficulty.

"A fifth is altogether unconcerned about the condition of the parts, until the head has been so long and firmly wedged in the superior aperture of the pelvis, that mortification follows.

"To complete this mournful series of portraits, *another*, instead of waiting for uterine action to throw off the placenta, will pull at the funis, until the uterus is inverted, or formidable hemorrhage follows; and when, as a consequence of his meddling, the uterus is filled with coagulated blood, and it strives to empty itself by strong contractions, which are called after-pains, he will strive to counteract this salutary operation, by exhibiting large doses of opium to quiet these pains, which are intended to repair the mischief he had himself produced.

"These sketches have not one shade too deep, and they are but a sample of those practised evils, which are of almost every day occurrence."—pp. 81–2.

Two Cases of Division of the Symphysis Pubis. By Dr. Manchini, of Naples.*—[Communicated by Dr. R. Harrison, of Argyll-street.] "My friend, Dr. Manchini, professor of Anatomy at Naples, has recently divided the symphysis pubis in two cases, in which it had been determined, by previous consultations, that the delivery could not be effected by the natural process. In both instances the children were born alive, and did well, and the mothers recovered. After the operation, which consisted in a simple division of the symphysis, the patients were put into warm baths, and the further separation of the bones and dilatation of the passages left to the efforts of nature. I know not exactly what time was necessary for this purpose in the first case; but, in the second, the delivery was accomplished eight hours after the operation, when the divided bones were found to have separated an inch and a half from each other. The parietal bones of the child's head overlapped each other very much, and the whole cranium was brought into the form of a cone, from the pressure it had sustained in effecting a passage through the openings, which were still narrow. This deformity afterwards disappeared, and both mother and child did well in every respect.

"In the first case, no reunion of the divided parts took place, owing to their not having been brought into apposition after the delivery; from which circumstance, the power of walking has not been perfectly recovered, but is performed in a *straddling* manner. In the second case, the parts were brought together after the accouchment, and retained in their natural situation by means of rollers properly applied: the bones united, and no inconvenience of any kind was afterwards experienced."

* Medical and Physical Journal.

Treatment of Lacerated Perineum. By Dr. Campbell, of Edinburgh.*—In this injury "Two modes of treatment have been recommended—first, to bring the lacerated surfaces into apposition, merely by securing the limbs together; and, secondly, to place two or three stitches in the perineum, and secure the limbs. A practitioner, who is at all acquainted with the changes which the external parts undergo, owing to their enormous distention during the expulsion of the fœtus, would scarcely think of recommending the perineum to be stitched; for the great relaxation consequent on such distention, should present to him a prospect of the parts cohering by merely bringing them into contact, without adding to the sufferings of the patient by an unnecessary operation, and wounding her feelings by an indelicate exposure. From the result of several cases, I am justified in saying, that, in recent accidents of this kind, sutures are not required. The removal of the urine and fæces are points which require particular care and management. The former should be drawn off by the catheter at regular intervals, and the latter removed, by some contrivance which will not require much exertion on the part of the patient. With regard to the state of the bowels, it was at one time the opinion of some, that it would be advisable to induce constipation, in order to prevent the patient from being obliged to exert herself; but experience proved the absurdity of this notion, because the efforts required for the expulsion of indurated fæces were found to derange the process of adhesion, and prevent reunion. On these grounds, therefore, our practice will be much more successful by keeping the bowels, if any thing, rather open; but by no means to occasion an actual purging, for fear of producing too much action and irritation of the parts which are the seat of injury. I have found, that in the cases under consideration, the free use of the subacid fruits will keep the bowels in a proper state. When laxatives are required, they should be exhibited in limited doses. To favour the approximation of the parts, the patient should be recommended to lie as much as possible on her side in bed.

"In chronic examples, on the other hand, of which I have had little experience, I do not think that stitches can be always dispensed with, however painful and indelicate the practice may be to the patient. With one exception, however, I have always succeeded in causing a reunion, by securing the limbs above the knees, by means of a common roller; keeping the wound clean, by changing the cloths applied to the external parts sufficiently often; using ablutions daily, with an astringent lotion in a tepid state, such as formerly recommended; and placing a piece of dry lint over the wound after each ablution.

"In chronic cases, where an attempt is made to obtain a reunion of the divided parts, the callous margins must be pared, or rendered raw by the application of caustic; and as they have had time to contract or recover their tone, some expedient must be resorted to, in order to bring them together, on which account I consider the use of sutures indispensable. An operation similar to that performed in

* Edinburgh Medical and Surgical Journal.

cases of hare-lip has also been advised in the injuries embraced by the present remarks; and the ingenious Smellie put it to the test of experiment in one instance, but without success. I still think, however, that this expedient merits further trial: for the failure of a solitary instance does not justify us in rejecting the practice altogether."

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VIII. MEDICAL JURISPRUDENCE.

The most prominent circumstance in this department, is the republication of Dr. Gordon Smith's Forensic Medicine, a work which forms both a book of reference for the library, and a convenient text book for the student. Dr. Smith has not, we perceive, lumbered his useful volume with prosing law cases of no interest, except adding to the bulk, unwieldiness, and expense of his book, as is notoriously the case with the work of Dr. Paris, which is the most towering specimen of book-making we have lately seen. We intend to make a more extended article on Dr. Smith's work in our next number.

On certain Phenomena in Persons Executed. By M. Guyon.*—"M. Guyon, Surgeon-Major, at Martinique, the intrepid experimenter on yellow fever, opened the bodies of 21 criminals, 14 of whom had been hung, and seven decapitated, with a view of ascertaining the truth, regarding the disputed subject of emission. Being placed near them at the place of execution, he observed the penis of those condemned to be hung, become erect at the instant of strangulation, and immediately afterwards five of them made urine abundantly. An hour after execution, he found in nine of them the penis in a state of semi-erection, and its canal filled with a kind of matter, with which the shirt was too profusely impregnated, to allow it to be supposed that it came from any other organ than the prostate. It is proper to observe that those persons were negroes, and habited in white dresses. On dissection, the blood-vessels of the head contained little more than usual; those of the lungs were gorged; the right auricle almost empty; the alimentary canal was distended with gas, especially the colon; the cervical vertebræ were uninjured.

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IX. CHEMISTRY.

Several works on this science have lately appeared, but few of them of any high rank. We observe, Mr. Dunglisson has announced a work on Organic Chemistry, founded on the treatise of Gmelin; the subject is worthy of every attention, but is still in its infancy; and there appears to be, at least in this country, very little interest attached to the study. We hope that this new work, from an acknowledged able writer, may prove a stimulus to investigation; though we much fear it will share the still-born fate of the productions of Berzelius, John-

* Revue Médicale.

son, and others, on a similar plan, which have been praised by some, but read or purchased by few. In a former series, in noticing Mr. Dunglisson's well written book on Moxa, we expressed a wish to meet with him soon again, on some more popular subject. We fear, however, that Gmelin will be still less so than Larrey.

The indefatigable Sir Richard Phillips has just published a Dictionary of Chemistry and Geology, with the name of James Mitchell on the title page. It has all the appearance, however, of Colin Mackenzie's One Thousand Experiments, and is probably in part, if not all, by the same hand. This is saying quite enough. Nobody, who knows any thing of Sir Richard's book-manufactory, requires to be put on their guard against being taken in with a catching title page, followed by a mass of ill arranged, inaccurate, and contradictory extracts, taken from all sorts of books, without discrimination, for the sole purpose of making a show and obtaining a ready sale.

The next work we shall notice in this branch, is Gurney's Lectures on Chemistry, delivered at the Surrey Institution. The course was a popular one, and if the most unscientific extravagance of speculation, aided by a proper proportion of legerdemain experiment, is calculated to be popular, Mr. Goldsworthy Gurney must have risen high in popularity from these lectures. His style of composition is of the same description as his science, quite unscholar-like and bad. He seems to have a strong hankering after the Platonic, or rather Pythagorean doctrine of the harmony of numbers. This, we understand, he carried so far as to propose introducing it into the practice of medicine, founded upon cases which he had treated according to the aforesaid harmonical properties of numbers! We cannot find this piece of folly in the book before us, though there is enough of the same kind equally absurd; but we have it on the best authority, that it was publicly stated in the lectures, and of course a legitimate subject of remark. We gladly escape from this book of dreams to something more tangible.

On the Condensation of the Gases. By Mr. FARADAY.—The discovery of the condensation of the gases by Mr. Faraday, of the Royal Institution, is highly worthy of notice, both from its singularity and from the results to which it may lead.

Sulphurous Acid, he found to be a very limpid, colourless fluid, and remaining so at 0° Fahr. When a sealed tube containing it was opened, part of it evaporated rapidly, cooling by its evaporation the other part, which however also dissipated in vapours, emitting the odour of sulphurous acid, and leaving the tube quite dry. A piece of ice dropped in the fluid acid made it boil, from the heat extricated by their union.

Sulphuretted Hydrogen is also a colourless and very limpid

fluid. When exposed to the air, it immediately rushed into vapour, the pressure of which seemed nearly equal to that of 17 atmospheres at the temperature of 50°. At 0° the acid continues in the fluid state.

Carbonic Acid is a limpid, colourless matter, extremely fluid, and distils readily and rapidly at the difference of temperature between 32° and 0°. It remains liquid at the greatest cold to which it has been subjected. Its vapours exert a pressure of 36 atmospheres at 32°.

Euclorine, is a very fluid, transparent substance, of a deep yellow colour, which, when exposed to the air, instantly passes off in vapour, causing the tube containing it to burst with considerable violence.

Nitrous Oxide is a very limpid, colourless fluid, and so volatile that the warmth of the hand makes it easily pass into vapour, which is again rapidly condensed by the application of a mixture of ice and salt. It boils by the difference of temperature between 50° and 0°. It remains fluid at 10°; when a tube containing it is opened at one end, it immediately rushes out in the form of vapour, the pressure of which is equal to about fifty atmospheres, at 45°.

Cyanogen is a limpid, colourless fluid, remaining so at 5°. When the tube in which it was prepared was opened, the expansion within did not appear to be very great, and the liquid passed with comparative slowness into vapour, but producing great cold. The fluid acid does not at first mix with water, but floats on it.

Ammonia.—Chloride, or muriate of silver, possesses the property of absorbing a large quantity of ammoniacal gas, which it gives off when heated to about 100°. When a portion of this compound was put into a bent tube, afterwards hermetically sealed, and was heated, it gave off the alkali, which condensed in the opposite limb, kept cold by ice. Liquid ammonia, as thus prepared, is transparent and colourless; but, as the chloride cools, it immediately passes off in vapour and combines with it, producing a curious combination of effects. The chloride, by absorption of the vapour, has its temperature elevated nearly to 100°; while at the distance of a few inches, considerable cold is produced by the evaporation of the ammonia.

Muriatic Acid is a colourless fluid, passing off in vapour on exposure to air, the pressure of which is equal to nearly forty atmospheres at the temperature of 50°.

New Combination of Antimony and Mercury. By Dr. Miccoli.*—"With a view of giving more energy to the action of mercury on the animal economy, the Author conceived the idea of mixing with an

* Annali universali di Medicina de Milano.

ointment, made of an ounce of mercury, and two drachms of lard, five scruples of the pulvis antimonialis, finely powdered. This ointment does not produce salivation, and is extolled by Dr. Micoli, as a remedy in a vast variety of diseases, whether from syphilis or not, and, amongst others, in hydrophobia. Mercury, killed by the same powder, and administered in doses of 10 or 12 grains, has a similar effect, yet not so secure from salivation. By substituting the oil of the seeds of the datura stramonium for the lard, used in the ointment, and a proper quantity of wax, a topical application is procured, which is also highly praised by our author."

Those remedies may deserve a trial.

Uréa in the Blood. By MM. Prevost and Dumas.*—The kidneys of various animals were removed, and the blood subjected to careful analyses, when a considerable portion of uréa was discovered, which differed but very slightly from that found in the urine of some animals. The physiologists (say the authors,) who may be curious to satisfy themselves of the truth of the facts mentioned in this Memoir, will not experience much difficulty. Five ounces of the blood of a dog, which has lived without kidneys for only two days, afford more than twenty grains of uréa; and two ounces of the blood of a cat, under the same circumstances, gave more than ten grains. These quantities are perfectly appreciable by the least experienced chemists. We would not advise them to try on rabbits, because they do not resist the operation so well. M. Vauquelin, whose name ranks so high as a chemist, repeated these investigations along with M. Segalas, and concludes from them that uréa acts as a very active diuretic.

Method of making Prussic Acid. By M. Pessina.†—"This Author gives the following process for the formation of the prussic acid, which he states to be by much the most economical hitherto discovered:—Eighteen parts of the prussiate of iron and potass are to be reduced to fine powder, and introduced into the bulb of a small tubulated retort of glass, to which a small balloon, likewise tubulated, is then to be attached. A conducting tube dips into a flask containing a small quantity of distilled water. A *cold* mixture, of nine parts of sulphuric acid with twelve of water, is next introduced into the retort, which is closed, and the whole left for twelve hours; the balloon, and the neck of the retort, being kept cool with ice and evaporating cloths. A gentle heat is then applied, and continued until the striæ in the neck of the retort become more rare, and a blue substance rises, as if it would pass into the receiver. The heat is now to be withdrawn, and the apparatus allowed to cool; the contents of the receiver being preserved in a proper vessel. The prussic acid thus obtained is stated to be pure, and the specific gravity about 0.898.

* Annals de Chimie.—Giornale di Fisica. † Annales de Chimie, &c.

X. MATERIA MEDICA AND PHARMACY.

In this department we have to remark, that more activity seems to prevail in France than in this country, though the great demand for pharmaceutical works here, shows that we are also much alive to improvement. We have now before us two excellent little French works, the "Formulaire de Montpellier," and the "Formulaire des Hospitaux civils de Paris." Among our own publications we have the Pupil's Pharmacopœia, by W. Maugham, which is one of those very objectionable short cuts to learning that the scanty education of young men renders necessary, to help them, at a halting pace, through the easy Latin of the Pharmacopœia. Those who require such an A. B. C. book as this, had much better go to school than thrust themselves prematurely, like "unlicked cubs," into a profession which they must disgrace by their ignorance. The work, however, is respectable enough of its kind: it is the necessity for such a work which we deplore.

We observe a "Pocket Conspectus of Prescriptions in Medicine, Surgery, and Midwifery" has been announced. We hope the author will not, in a work calculated, if well executed, to be so useful, pander to the ignorance of half educated boys, by putting the formulæ into English; which, by the way, Dr. Thomas has recently done in his stupid and contradictory work, "The Practice of Physic."

We have the same circumstance to reprehend in a little work of great interest and merit, the translation, with notes, of M. Magendie's Formulary for the Preparation of New Remedies, by C. T. Haden,* as he has given all the formulæ in English; possibly from his extravagant love of every thing French, the original formulæ being in the vernacular tongue. In our former series we have repeatedly given large extracts from the original work of Magendie, and also from the papers of other inquirers on the subject; and in our present number we have analysed an excellent paper by Dr. Elliotson, on one of the most interesting of the new remedies, the sulphate of quinine. We shall only therefore make the following extract from Mr. Haden's book:

Preparation of Veratrine.—"They repeatedly digested the seeds of the *veratrum sabadilla* in boiling alcohol. These tinctures, filtrated whilst almost boiling, deposited, on cooling, whitish flakes of wax. They redigested the matter which remained dissolved, after evapo-

* Formulary for the Preparation and Mode of Employing several new Remedies, namely, the Nux Vomica, Morphine, Prussic Acid, Strychnine, Veratrine, the active Principle of the Cinchonas, Emetine, Iodine, &c.; with an Introduction and copious Notes. By Charles T. Haden, surgeon, &c. [Translated from the French.] pp. 110, 8vo. Underwood, London, 1823.

rating it to the consistence of an extract, in cold water: a small quantity of fatty matter now remained on the filter. The solution was slowly evaporated, and it formed an orange yellow precipitate, which possessed the characteristics of the colouring matter found in almost all the woody vegetables. On adding a solution of acetate of lead to the liquor, which was still deeply coloured, a new and very abundant yellow precipitate was immediately formed, which was separated by means of the filter. The liquor, now nearly colourless, still contained, amongst other substances, the acetate of lead, which had been added in excess: a current of hydrosulphuric acid was used to separate the lead. The liquor was then filtrated and concentrated by evaporation, was treated by magnesia, and again filtrated. The magnesian precipitate was digested in boiling alcohol. The alcoholic liquors gave, on evaporation, a pulverulent substance, which was extremely acrid, and possessed all the properties of the alkalis. This substance was at first yellowish; but, by solutions in alcohol, and subsequent precipitations, caused by pouring water into the alcoholic solutions, it was obtained in the form of a very white and perfectly inodorous powder."

Vegetable Alkali from Rhubarb. By M. Nani, of Milan.*—Six ounces of rhubarb, in powder, were boiled for two hours in eight pints of common water, with four drachms of sulphuric acid; this was filtered, pressed, and the residuum reboiled with six ounces of water and two drachms of sulphuric acid; the fluid being again separated, the residuum weighed but two ounces. The united infusions were mixed by degrees with three ounces of quicklime, and from being yellow they became of a blood-red colour; after standing for a day, the precipitate was filtered out, dried in the sun, and weighed six ounces. It was then digested at a high heat, with four pounds of alcohol S.G. .837 for two hours, filtered, and again digested with two pounds more of alcohol, which when separated by a second filtration, was added to the first. Being put into a retort, five pounds of the alcohol were distilled off, and the rest of the liquor carefully evaporated to dryness. The residuum weighed two drachms, was of a red brown colour, with brilliant points throughout. Its taste was sharp and styptic. It was soluble in water, and its odour like that of rhubarb. This preparation is recommended in pharmacy as being of constant quality, of convenient solubility in water, and deprived of its inert and ligneous matter; one or two grains are said to be sufficient for a dose."

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XI. BOTANY.

Great activity still prevails in this delightful science, though the minute discoveries daily making are not much fitted for the pages of a journal like this. Mr. R. K. Greville is going on with great spirit in his admirable delineations of the Scottish cryptogamia. We regret to see him referring so often to so very

* Journal de Pharmacie.

clumsy a work as Gray's, which he surely cannot in any seriousness hold to be an authority.

Metamorphosis of Vegetables into Animals. By M. Gaillon.*—"It has been ascertained by several Naturalists, that a great number of the *confervæ* are disorganized during the summer, and that the greenish globules, which are seen in their interior, become animalcules, which swim for a certain period in water, are susceptible of irritation on being touched, &c. &c.; and at the end, reunite themselves to form new *confervæ*. M. Gaillon, in his new Memoir, presented to the Institute of France, has made observations, which fully confirm those previously made on this singular order of beings, which seem to destroy all traces of the distinction so feebly marked between the animal and vegetable creation. The species, to which he has applied his researches, is the genus ceramion of Decandolle. Dillwyn has described them under the name of conferva comoides. They cover the mud on the sea coast at Dieppe. The corpuscles, which are of a greenish colour, M. Gaillon has observed, leave the filaments of the conferva comoides at frequent intervals, and assuming the form sometimes of an oval, sometimes of a parallelogram, move about slowly or rapidly, and change their direction, like the cyclades and other animals of that class. He has even forced these corpuscles from the filaments before their time, and has observed the same phenomena. M. Mertens, a celebrated botanist of Germany, has made the same observations. Last year he exhibited, to several *savans*, the conferva mutabilis; on the 3d of August, in the state of a plant; on the 5th, disorganized, in the form of molecules, possessing the power of locomotion; reunited on the 6th, in the form of simple articulation; and, on the 11th, constituted again, in their primitive form."

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XII. ZOOLOGY.

This branch of science has lately been rather in a languid state. The excellent work of Dr. Fleming, of Flisk, has had but little power to revive it. We hope that the new Journal of Zoology, announced for speedy publication, will attract more attention to it. We are quite anxious also for the appearance of Kirby and Spence's concluding volumes of their Entomology, which has now been announced as nearly ready for the last five years.

On the Generation of Worms. By M. Leo.—This Author has lately confirmed what Swammerdam had remarked with regard to earth worms—that they multiply by eggs, which are found in spring, and which allow, not only the enclosed young, but also the circulation of its blood to be seen. These observations have likewise been confirmed by Rudolphi. According to him, what some naturalists have found in the body of worms, and which they have considered as the young, is merely an

* Revue Medicale

intestinal animal, which he has seen not only in the worms themselves, but also in their eggs.

XIII. MISCELLANEOUS.

CLAPHAM RETREAT.

For the Medical Treatment of the Insane and Imbecile.

Through the kindness of Dr. Burrows, the visiting physician, we had an opportunity of seeing the excellent arrangements of this establishment soon after it was opened, and we cordially unite with our brother journalists in strongly recommending it to the notice of the profession, as one of the best managed institutions of the kind we have ever seen. It is extremely commodious in its internal arrangements, and out of doors there are extensive grounds and gardens for walking and recreation, and a bowling green, &c. for amusement. The house commands from every window a wide field of view all around the metropolis, one of the most advantageous circumstances, as we conceive, for contributing by its cheerfulness to the recovery of the insane. This is even taken ingenious advantage of in the enclosure for the more outrageous, a mound being raised in its centre, which commands a good view of the grounds. The same principle is acted upon within doors, in allowing the inmates cards, billiards, books, &c. and, not the least important of all is, the care taken (with proper caution of course) to afford the consolations of religion, and always according to the peculiar creeds of the parties. We need only add, that the whole is under the care of Dr. Burrows, whose work on Insanity is so well known to the profession that it requires not our praise. In a word, we do not know an establishment of this kind that affords a greater hope of cure to the insane, or a more comfortable retreat to those deemed incurable, and we therefore hope it will be extensively patronized.

Selected Papers.

Contributions to the Pathology of the Stomach, the Pancreas, and the Spleen. By John Abercrombie, M.D.

(From the Edinburgh Medical and Surgical Journal for January, 1823.)

INFLAMMATORY AFFECTIONS AND ULCERATION OF THE STOMACH.

Acute inflammation of the stomach is not a common disease in England; and, when it does occur, the symptoms are so se-

vere and so well defined, as immediately to indicate the nature of the affection. But the stomach is liable to inflammatory action in a chronic form, which often advances so slowly and insidiously, that the dangerous nature of it may be overlooked, until it arrives at that period of its progress in which it assumes the characters of organic and hopeless disease. In the early stages of this affection, the prominent symptoms are often such as merely indicate derangement of the functions of the stomach, and are consequently very apt to be included under the general term Dyspepsia. The patient complains of acidity, eructations, flatulence, and oppression of the stomach after eating. There is usually pain, but it varies very much both in degree and in its duration. In many cases it is only complained of after eating, continues in considerable severity while the process of digestion is going on, and subsides after the process is completed. The appetite in these cases is frequently unimpaired; but the patient is afraid of taking food on account of the pain which is induced by it. In other cases, there is permanent uneasiness, but it is aggravated by taking food; frequently there is tenderness of the epigastric region on pressure; and sometimes there is pain in the back, at the part corresponding with the seat of the stomach. Vomiting is apt to occur; but in the early stages it is only occasional, and is ascribed to incidental causes. Afterwards it becomes more frequent, but still without that degree of regularity which appears to indicate serious disease. By great attention to diet, it may occur but seldom, and the disease may go on for several months without exciting alarm. The vomiting then becomes gradually more frequent, and the uneasiness in the stomach more permanent, until the patient either sinks by gradual wasting, or is cut off more rapidly by hæmatemesis, in some cases before the disease has been of long standing. In some of these cases there is little pain, the prominent symptom being the attacks of vomiting, which became gradually more and more frequent. In other cases, vomiting does not occur till a very advanced period, the leading symptoms being the pain, excited or increased after eating, with severe dyspeptic symptoms, and gradual wasting.

The disease which is going on during this course of symptoms, consists of chronic inflammation, which in many cases appears to commence in a circumscribed portion of the mucous membrane of the stomach. The progress of it appears to be extremely slow; and it is probable that it may continue for some time, and then subside, and appear again after a considerable interval, until it at last gradually produces more permanent effects, in thickening of the coats of the stomach, adhesion to the neighbouring parts, and ulceration.

The following case affords an example of this insidious and

dangerous affection; and it is remarkable from the long intervals of health which repeatedly occurred in the progress of it.

Case I.—A woman, aged 45, had been for several years liable to attacks of pain in the stomach, which gradually became more severe and of longer continuance, until at length they continued for several weeks at a time, and were little affected by any remedies. I saw her in several of these attacks during the last eighteen months of her life, and, while affected by them, she complained of pain in the epigastric region, chiefly referred to a particular spot of small extent. It was very much increased by eating, so that her only relief was when the stomach was empty, and was accompanied by frequent vomiting, which, however, did not occur at any regular periods. These attacks usually continued for several weeks at a time, and then left her for weeks or months in very good health. Three weeks before her death, after having been for several months free from any uneasiness, she was exposed to cold by getting her feet wet, and almost immediately complained of uneasiness at the stomach. At first it was slight, with loss of appetite, but, after several days, it became more severe, with some vomiting. There was no fever; and nothing could be discovered by examination. The pain was chiefly referred to a particular spot in the epigastric region, rather to the left side; and no symptom occurred different from those in her former attacks, until after eight or ten days, she was suddenly seized with copious hæmatemesis. This occurred repeatedly; and she died rather suddenly about a week from the first occurence of it, and about three weeks from the commencement of the attack. *Dissection.*—The stomach had contracted an adhesion of small extent to the left lobe of the liver, and another of greater extent, and very firm, to the pancreas. At both these places the coats of the stomach were diseased, but in the greatest degree at the adhesion to the pancreas. Here they were much thickened and indurated, for a space about three inches long and two inches broad; and the internal surface of this portion was entirely ulcerated, as if a portion of its thickness had been dissected out. Besides this uniform ulceration, there were several points which penetrated deeper, and some of these contained coagulated blood, giving reason to suppose that they had been the source of the hemorrhage. The remainder of the stomach was in a natural state, and the other viscera were healthy.

In this remarkable case, there is every reason to believe that the paroxysms of pain in the stomach had been connected with inflammatory action, confined to a certain circumscribed portion of it, and frequently subsiding after some continuance, leaving the part in a comparatively healthy state; but that under these successive attacks, the part had become gradually thickened, until the last attack terminated by ulceration, and this by the fatal hemorrhage.

On account of the periodical nature of the pain, and the long intervals of perfect health, I consider this case as one of very

great interest. In the more common forms of the disease, the symptoms are more constant, become gradually more severe, and are, in the early periods, often so obscure, that, for a considerable time, the case may be considered as merely dyspeptic. A woman mentioned by Chardel, had dyspeptic complaints, with pain in the stomach and back, and occasional vomiting. Solids only were vomited; and, by great attention to diet, she suffered little inconvenience for several months. The vomiting then became more frequent; at length it occurred daily—and several times a day. She then wasted, and died, gradually exhausted, about eight months from the commencement of the disease, and between two and three months from the time when the vomiting began to occur every day. The stomach was found adhering to the liver, the spleen and the pancreas,—along the great arch it was considerably thickened, and internally ulcerated, and beset with granulations. There was ulceration also about the cardia. A man mentioned by the same writer had, for five months, vomiting after meals; and death, by gradual wasting, without any other symptom. Nothing could be felt in the region of the stomach by the most careful examination. On dissection, the stomach was found adhering intimately to the concave surface of the liver; and an ulcer at this place had perforated the stomach, and penetrated a considerable way into the substance of the liver. There was also ulceration in the neighbourhood of the cardia. A man, mentioned by Pinel, had great acidity of the stomach, and other dyspeptic symptoms, with occasional attacks of acute pain, and afterwards vomiting and gradual wasting. A tumour was felt in the epigastric region. The pain became more acute, the smallest quantity of food producing great uneasiness; and he died exhausted, after six months. The omentum was found hard, red and fleshy, and gathered up into a mass under the great arch of the stomach. The mucous membrane of the stomach was much destroyed; and there was an ulcer three inches in length near the pylorus. Another course of symptoms occurs in a case related by Frank. A man, aged 50, was seized, after a violent exertion, with copious vomiting of blood, followed by discharge of blood by stool. These symptoms continued several weeks, and then ceased. He then had dyspeptic symptoms, debility and emaciation. His appetite was good, but he had great uneasiness after eating; and some tenderness was felt in the right hypochondrium, with difficulty of lying on the right side. He became gradually more and more emaciated; and at last had some vomiting and dropsical symptoms, and died after seven or eight months. On dissection, the liver was found pale, hard, and much diminished in size. The small curvature of the stomach adhered to it; and at the place of adhesion, there was an ulcer five inches long and two

broad, which perforated the stomach, and penetrated into the substance of the liver.

An important variety in the history of the disease occurs in those cases which are distinguished merely by pain of the stomach and dyspeptic symptoms, without vomiting, or any symptom distinctly indicating serious disease. A man mentioned by Chardel had dyspepsia, and acute pain after eating, which subsided when the process of digestion was completed. By taking very mild food in small quantities, he felt less uneasiness; but after some time, without any change in the symptoms, he lost strength so much, that he was confined to bed. His appetite continued, but he was afraid to satisfy it. He had very little nausea, and did not vomit above two or three times during his illness, which continued many months. On dissection, there was found thickening of the coats of the stomach, at the upper part, without ulceration; and enlargement of the lymphatic glands in the neighbourhood of the stomach. A man, mentioned by the same writer, had pain in the right hypochondrium, loss of appetite, with great acidity and gradual wasting. He had no vomiting, but a good deal of diarrhœa, and died, gradually exhausted, after a year; the stools at last having become black and bloody. The stomach was found adhering both to the colon and the diaphragm. At the part of adhesion to the diaphragm, a portion of the stomach was destroyed by ulceration; and by means of the adhesion, a part of the diaphragm supplied the place of the part that was destroyed. A woman, mentioned by Pinel, had laborious digestion, pain of the stomach after eating, and gradual wasting. She had nausea, but very seldom vomited, and died after several months; for a short time before death, the vomiting had been rather more frequent. The stomach adhered to the liver and to the pancreas. The mucous membrane was irregularly destroyed and ulcerated. At the point of adhesion to the liver, the parietes were perforated by ulceration. The pyloric extremity was considerably thickened; the omentum was thickened and indurated.

In this insidious and dangerous affection, the symptoms appear to vary exceedingly, according to the extent of the part that is affected; and this seems to admit of remarkable varieties. In a case by Dr. Carmichael Smyth,* it was of wonderfully small extent, and the symptoms were so slight, that they had scarcely been attended to, till the fatal event took place unexpectedly. A young lady, aged 15, had for many months complained occasionally of pain at the stomach, but so slight that no attention had been paid to it, until one evening she was seized with violent pain and vomiting, and died in 24 hours with symp-

* Medical Communications, Vol. II. p. 467.

toms of peritoneal inflammation. On dissection, extensive peritoneal inflammation was met with, and considerable effusion of turbid fluid in the cavity of the abdomen. In the anterior part of the stomach, there was a round ulcer, no larger than a sixpence, with hard callous edges; and the coats of the stomach at the seat of it were considerably thickened. On minute examination, it was found that the ulcer had entirely penetrated the stomach by an opening sufficient to admit a quill. The other parts of the stomach were healthy.

In this remarkable case, there is every reason to suppose that the fatal attack had been connected with the perforation of the stomach, and the escape of its contents into the cavity of the peritoneum. Many cases of the same kind are on record, differing in their previous history, but presenting similar symptoms in the fatal attack. M. Gerard has collected about seventeen examples of it, in a Memoir "On the Spontaneous Perforations of the Stomach." In some of these cases, there had previously been chronic vomiting, and other symptoms indicating serious disease in the stomach; but in others, the previous symptoms were slight and obscure, and some had enjoyed tolerably good health. The fatal symptoms commenced with a sudden attack of most acute pain in the epigastric region, afterwards extending over the abdomen—sometimes, but not always, with vomiting. The pain continued with great anxiety, oppression, and every appearance of extreme suffering. The abdomen was, in some cases, distended and tender—in others contracted, and drawn into balls; and death took place, with rapid sinking, in periods of from twelve to twenty-four hours. On dissection, the stomach was found penetrated by ulceration of various extent; and articles of food and drink were found in the cavity of the peritoneum. The perforation seemed, in general, to be connected with ulceration of some standing, as appeared from its thickened and retorted edges, with thickening of the coats of the stomach, and adhesion to the neighbouring parts; and, in some cases, there was extensive organic disease at the part which had given way. In some of the cases, peritoneal inflammation had supervened; but in others, no morbid appearance was remarked among the intestines. Several cases of the same kind are described by Dr. Crampton and Mr. Travers, in the Medico-Chirurg. Trans., vol. viii. The following is the most remarkable case that has occurred to me; and it is chiefly important, from the slight and obscure nature of the previous symptoms.

Case II.—A woman, aged 50, had been for several years in bad health:—her principal complaints were referred to the region of the uterus, and the os uteri was felt to be considerably indurated. She had also been liable to pain in the stomach, capricious appetite, and

occasional vomiting; but these complaints had not been so severe or regular as to excite much attention, and had always been considered as of secondary importance, until she was suddenly seized with most violent pain, referred to a small spot in the epigastric region, accompanied by vomiting, and followed by severe pain and tension of the whole abdomen, great prostration of strength, and small, feeble, rapid pulse. She died in eighteen hours from the attack, the pain having continued unabated till a very short time before death. *Dissection.*—The stomach was healthy in its whole anterior aspect; but in the posterior part of it, there was a portion, about three inches in extent, which was indurated, and nearly half an inch in thickness. In the centre of this portion there was a round opening, about one-third of an inch in diameter, which entirely perforated the substance of the part. Internally, the opening was smooth, and rounded at the edges; and the smoothness extended to very near its external aperture, where a thin membrane had recently given way, so as to make the aperture ragged. The stomach, in other respects, was healthy. There was a good deal of fluid in the cavity of the abdomen, which seemed to have escaped from the stomach. There was scirrhus of the neck of the uterus, with considerable enlargement.

A lady, mentioned in the *Journal Général de Medécine* for August, 1821, after having been dyspeptic for several years, was seized with severe pain, extending from the epigastric region towards the left kidney, accompanied by cold shivering, great anxiety, dyspnœa, and prostration of strength. The symptoms soon subsided, but returned on the following day, after taking food; and her principal distress was referred to a small circumscribed spot in the epigastric region. The attack returned in the same manner, after taking food, for four days, subsiding after some time, and leaving her in the interval free from pain. On the fifth day, the symptoms returned in the usual manner, but did not subside, and she died in twenty hours. On *dissection*, there was found peritoneal inflammation, with effusion in the abdomen, of a brown fluid, mixed with portions of food. The kidneys were natural. In the anterior part of the stomach, there was a round opening, nine lines in diameter. On the margin of it there was slight inflammation; but the stomach, in other respects, was healthy.—A woman, mentioned in the Medical Repository for March, 1823, was liable to dyspeptic complaints, and was seized occasionally with pain in the stomach. It obliged her to sit down and rub her stomach with her hand for a few minutes, when it subsided, and she was able immediately to resume her work as a servant. One day, while engaged in her usual employment, she was seized with excruciating pain in the stomach, without vomiting or any other symptom. It continued through the whole day, and she died about midnight. On dissection, a viscid fluid, mixed with

articles of food, was found in the abdomen. The stomach was perforated near the cardia, by an opening three-fourths of an inch in diameter internally, and one-third externally. The part was considerably thickened, and adhered to the liver.

To these observations may be added the remarkable case of Admiral Wassenaer, mentioned by Boerhaave, who died suddenly in the act of vomiting, or rather attempting to vomit, soon after he had dined. The lower part of the œsophagus had given way at the seat of an ulcer, and all the food and drink which he had taken at dinner were found in the cavity of the thorax.

Sudden rupture, subsequent upon chronic and often slight ulceration, occurs also in the intestinal canal, and with symptoms very similar to those now referred to in this affection of the stomach. For two interesting examples of this kind, presenting the affection in two very different forms, I am indebted to my friend Mr. William Wood.

Case III.—A stout man, aged 36, who had previously enjoyed good health, was suddenly seized, while engaged at his usual employment, with violent pain in the abdomen, and vomiting. The pulse was not affected. The case was considered as ileus, and blood-letting and the other usual remedies were employed, but without benefit:—the symptoms continued, the pain extending over the whole abdomen—the pulse became quick and feeble, with rapid sinking of the vital powers, and he died in sixteen or eighteen hours. On *dissection*, nothing could be discovered in the cavity of the abdomen, except a considerable quantity of a thin feculent fluid; and it was only after a long and minute examination that a small opening was discovered in the lower part of the duodenum, capable of transmitting a large quill. It had its origin internally, in an ulcer of the mucous membrane, which, though of small extent, was considerably larger than the perforation.

The following case, by the same able practitioner, is still more remarkable, from the extent of organic disease which was met with, the patient having previously enjoyed good health, except habitual costiveness.

Case IV.—A gentleman, aged 60, on 6th December, 1810, was sitting, after dinner, reading aloud to some friends who were with him, when he suddenly complained of most violent pain at the lower part of the abdomen, immediately above the os pubis, and vomited repeatedly. His countenance became pale, and his hands rather cold; and his pulse, when Mr. Wood saw him, was feeble, and not frequent. The most judicious practice was employed without benefit;—the pain continued—the vomiting recurred at intervals—the pulse became very frequent and feeble, with rapid sinking of the vital powers,—and he died in about six hours. On *dissection*, much feculent matter was found in the cavity of the abdomen, which was found to have escaped through a perforation of the colon, at its lower

part, a little above its junction with the rectum. The opening was larger than a shilling, and was surrounded by a mass of induration; and, for several inches, the intestine was hard and thickened, and, on its internal surface, extensively ulcerated. At the lower part of this diseased portion, from two to three inches below the rupture, the intestine was contracted by a hard ring, so as scarcely to transmit a finger.

The remarkable feature in these cases, is the perforation having taken place without any previous illness. I have formerly described several cases in which such perforation took place after symptoms, which had distinctly indicated disease of the mucous membrane of the bowels.* The affection appears in a third form, occurring in the course of a febrile disease, without symptoms which had previously indicated disease in the bowels. Many cases of this kind are mentioned by the French pathologists. In the *Archives Générales de Medécine* for January, 1823, M. Louis has described some of such interest, that I shall make no apology for introducing a report of them, as an Appendix to this paper.

On the other hand, it is remarkable what extent of disease may exist in the stomach, and yet the disease be drawn out to a great length, and with slight and obscure symptoms. A woman mentioned by Pinel received an injury on the stomach, from a thrust by the head of a goat, followed by tenderness of the epigastric region, which continued without any other symptom for two years. She then had more fixed pain, and a tumour appeared, which was tender to the touch. At first it was two inches in diameter, but soon increased to double that size. After a few days this tumour suddenly disappeared, during a fit of coughing, leaving only a tenderness of the epigastric region. She then had cold shiverings, followed by heat, great weakness and emaciation, and death, after four months from the time when the tumour appeared. For some time before death, the pain of the stomach had been more acute, with difficult breathing, hiccup, and fetid eructation; but no other remarkable interruption of the functions of the stomach. The appetite had continued tolerably good through the whole course of the disease, and the bowels regular, except immediately after the disappearance of the tumour, when there was diarrhœa. On *dissection* the intestines were found inflamed, and adhering extensively to the omentum, and to the parietes of the abdomen. The stomach adhered to the liver and to the pancreas, at the small curvature; the coats were an inch in thickness, and the large curvature adhered to the colon. The mucous membrane of the stomach was covered by a fetid puriform matter; and a

* Edin. Med. Journal, Vol. XVI. p. 177 and 329.

burrowing cavity was found, which admitted the finger, and conducted it to the part on the small curvature where there was the adhesion to the liver. There was also a communication betwixt the stomach and the ileum.

In this remarkable case, there had evidently been most extensive inflammatory action, and a collection of matter had probably taken place betwixt the coats of the stomach, at the place where the burrowing cavity was met with. It had probably formed the tumour which was felt externally, and disappeared so suddenly, the abscess bursting into the stomach, and the matter being discharged by the bowels.

In most of the cases now referred to, the disease seems to have been originally simple inflammation, in a very chronic form, terminating by its usual consequences—thickening, adhesion, and chronic ulceration. But another modification of the affection occurs in the same parts, and with nearly the same symptoms, under the form of tubercular disease, with the unhealthy ulceration which usually results from it. A woman mentioned by Morgagni, was affected with pain of the stomach for several years. She then had loss of appetite, nausea, fever, and vomiting of blood. The epigastrium was tender to the touch, but no hardness could be discovered. These attacks occurred frequently, and were relieved by bleeding; and several times she seemed to be getting well. A tumour then appeared above each clavicle, with difficult breathing and severe headach. She still had uneasiness in the stomach, but no return of the vomiting of blood, and died, gradually exhausted. On dissection, the coats of the stomach were found much thickened, and very soft. Its cavity contained a considerable quantity of a fetid pultacious matter, which seemed to have been discharged from the posterior part of it, where the coats were so much thickened, as to form a tumour projecting into the cavity. This tumour was ulcerated and gangrenous, and resembled a ruptured abscess of the most unhealthy kind. The pancreas was hardened; the other parts in the abdomen were sound. The tumours above the clavicles were masses of diseased glands.

In the following case, again, the disease had more the appearance of the cancerous ulceration. It is the most remarkable example that has occurred to me of destruction of the stomach by ulceration.

Case V.—A lady, aged 49, had been in bad health through the winter 1811–12, complaining chiefly of general weakness, and a constant uneasiness across the epigastric region, with occasional attacks of acute pain towards the left side. In May, 1812, she began to be affected with vomiting, which continued from that time, and became more and more urgent. I saw her in July, and found her much emaciated and reduced in strength,

so as to be confined to bed. She complained of an obtuse pain in the epigastric region, where considerable hardness was felt; and she vomited a portion of every thing she took, sometimes immediately after taking it, and sometimes a considerable time after. The pulse was weak, and rather frequent. She continued with very little change till the beginning of September, when the vomiting subsided, and she was completely free from it for more than a fortnight. During this time she was affected with diarrhœa; her strength sunk, and she died on the 23d, the vomiting having returned three or four days before her death, though with less severity than before. During the period when she was free from vomiting, she took food and drink of various kinds, and in very considerable quantities, and continued to do so till a few hours before her death. *Dissection.*—On opening the abdomen, and looking for the stomach, a large irregular opening presented itself, which was found to lead into the cavity of the stomach, a large extent of the great arch being entirely destroyed. On the left side, in the region of the spleen, there was found a large irregular mass, which appeared to consist of an enlarged and diseased spleen, and the remains of the great arch of the stomach, so blended into one mass, that it was impossible to distinguish one part from another. In the substance of it there was a cyst full of very fetid matter. This mass was attached to the cardia by a narrow neck, which remained of the coats of the stomach at that place; and when the parts were taken out and displayed by suspending the stomach by the cardia and the pylorus, the appearances were very remarkable. When stretched out in this manner, about one half of the stomach, at the pyloric extremity, was sound and healthy. This portion was attached to the cardia by a narrow portion of the small curvature which remained; and, by another small portion of the great curvature, the mass now referred to hung down on the left side. The remainder of the stomach consisting of the left side and lower part of the great arch, was entirely wanting, to such an extent, that when the parts were extended in the manner now mentioned, it appeared that nearly one half of the stomach had been destroyed. There was reason to believe, that the part which seemed to be wanting was involved in the diseased mass on the left side, and that the sound parts had been separated from this portion, by a line of ulceration of such extent, that the sound extremity remained attached to the cardia only by a portion about two inches in breadth, which remained of the small arch. The ulcerated edge, where the separation had taken place, was studded with numerous hard tubercles, like the edges of a cancerous ulcer. The pancreas was hard, the liver pale and soft, the other viscera were healthy.

Under the various forms illustrated by the cases which have

been referred to, this dangerous affection of the stomach may be going on, with much diversity in the symptoms. They may be severe, and indicating serious disease, or they may be such as, without very great attention, are likely to be considered as merely dyspeptic. There may be hardness in the region of the stomach, or there may be nothing to be discovered by the most careful examination—and it is, in fact, extremely difficult to propose any rules by which the disease can be distinguished in its earlier stages. It may be suspected, when there is either permanent uneasiness in the region of the stomach, or pain recurring with regularity after meals, not prevented by every attention to the quality of the articles taken—when there is tenderness on pressure, especially if the pain and tenderness be always referred to a particular spot of small extent, and distinctly defined—when, along with these symptoms, there is vomiting occurring at short periods after meals, and after articles of the mildest quality—and when, without any very urgent or defined symptoms, a patient with affections of the stomach is becoming progressively weakened and emaciated, in a manner which his symptoms, if considered as merely dyspeptic, could not account for. It must be confessed, however, that none of these symptoms are entirely to be relied on—that most or all of them may exist in connexion with a state of the stomach which is merely dyspeptic—and that, under a more serious form, they may even go on to a fatal termination, with every appearance of extensive disease, and yet nothing be discovered by the most careful examination. A woman mentioned by Chardel had been affected, for eight months, with habitual vomiting, every article of food being brought up soon after it was taken. She was then suddenly seized with violent pain of the stomach, followed by copious vomiting of blood, and died in fifteen minutes. The stomach was found full of coagulated blood, but no disease could be discovered in its structure, or in any of the neighbouring parts; and even the source of the blood could not be ascertained. In another case, also of long standing, in which there were frequent attacks of vomiting of blood, and death by gradual exhaustion, he could detect nothing but some varicose veins upon the mucous membrane of the stomach.

Upon the whole, it appears that this important part of pathology is still involved in much obscurity; but it is of much importance to be kept in mind, as an established principle, that symptoms which, at first sight, appear to be merely dyspeptic, often depend upon chronic inflammation of the stomach. Where the diagnosis is so difficult, indeed, the practice must be often empirical; but, when dyspeptic symptoms are unusually severe, or unusually obstinate, or are accompanied by an unusual de-

gree of emaciation or debility, we ought always to suspect the existence of some more deep-seated cause, than that condition of the stomach which we usually understand by the indefinite term Dyspepsia. The treatment, in such cases, must be regulated by the period of the disease, and the activity of the symptoms. They will probably seldom admit of general bleeding; but much benefit is obtained from topical bleeding, blistering, issues, and the tartar-emetic ointment. The food should be of the mildest kind, and in very small quantity, with abstinence from all stimuli, and from bodily exertion. Hence the importance of distinguishing the affection from dyspepsia, whenever the distinction can be made, as the regimen and exercise proper in dyspeptic cases would probably be injurious.

Whether the disease can be cured after it has advanced to the stage of ulceration, may perhaps be doubted; and it cannot be easily determined; because, when a case terminates favourably, we have no means of ascertaining that ulceration really existed. From what we observe, however, in regard to the intestinal canal, we have good reason to believe that ulceration there may terminate favourably, provided it be simple ulceration of the mucous membrane, without tubercular disease, or much thickening of the coats of the intestine. I think I have seen the cicatrices of such ulcers, when the patient has died of another disease, after having been for a considerable time free from every complaint of the bowels. It is probable that simple ulceration of the stomach may admit of the same favourable termination; and we certainly see cases get well, in which, from the violence and duration of the symptoms, we had good reason to suppose the existence of that disease. Of the various remedies that are employed in such cases, it is not easy to say which are really beneficial. Mercury, in small quantities, seems to be useful in such cases—in others, lime-water, and the oxyd of bismuth; but the remedy from which I have seen the most decided benefit, in cases in which I have suspected the existence of that affection, is the sulphate of iron. The following case will serve as an example of the affection which I here refer to.

A lady, aged about 30, came to Edinburgh from a distant part of the kingdom, in summer 1818. She was affected with a violent pain of the stomach, which seized her every day, immediately after dinner, continued with great violence through the whole evening, and gradually subsided about midnight, or soon after it. It sometimes attacked her after breakfast, but more rarely. The complaint was of two years' standing, during which time, great variety of practice, and every variety of diet, had been tried, with but very slight and transient benefit. The paroxysms occurred with perfect regularity; and she was considerably reduced in flesh and strength. In the epigastric region, no swelling could be discovered; but there was consi-

derable tenderness on pressure at a particular spot. She had a sallow unhealthy look; and her whole appearance gave strong ground for suspecting organic disease. Various remedies were employed during the summer, with little advantage. At last she appeared to derive some benefit from lime-water, and returned home in autumn 1818, rather better. But the affection soon recurred; and she returned to Edinburgh in 1819, as bad as ever. After another trial of various remedies, this severe and untractable affection subided under the use of the simple remedy to which I have referred. She took gr. ij. of sulphate of iron three times a day, with a few grains of aromatic powder; and with the addition of a small quantity of aloes, so as to regulate the bowels. Under the use of this remedy, she was very soon free from complaint, and has continued to enjoy good health.

There are other affections which seem to be connected with inflammatory action of the mucous membrane of the stomach, but I shall only allude to one of them. A woman, aged about 30, and previously healthy, in the course of a slight febrile disorder, became affected with pain and tenderness of the epigastric region, extending over the abomen. The mildest articles of food produced great pain. There was diarrhœa, with much griping and frequent vomiting. The affection was accompanied by a very feeble pulse, great debility, and collapse of the features; and there was a peculiar rawness and tenderness of the tongue, mouth, and throat. After various remedies had been tried without benefit, these symptoms subsided speedily under the use of lime-water.

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Notice by Dr. Abercrombie of M. Lewis's Cases of Perforation of the Intestines in Acute Diseases, referred to in page 233 of this Number.

I.—A man, aged 24.—Had feverish symptoms, with pain of his back and loins; was better after a few days, and returned to his usual employments; but, after some days, relapsed; had then headach, pains of his limbs, white loaded tongue, thirst, hot skin, and slight pain of the belly, when it was pressed; bowels rather confined; pulse frequent; after leeches, glysters, and fomentations, was better; pain of belly gone; but the symptoms returned from improper diet, and were again relieved by the same means; and about the 12th day of the disease he was entirely free from uneasiness, though some heat and fever continued. On the three following days he was considered as convalescent; the pulse down, and no complaint. In the night of the 3d day, was seized with vomiting and severe colic pains; belly distended and tender; pulse small and frequent. Died in 20 hours. Dissection.—Bowels adhering extensively; feculent and bilious matter in the cavity of the abdomen, filling the lower part of it. At the lower end of the ileum, near the caput coli, there was a perfora-

tion of the intestine two lines in diameter. It was connected internally with an ulcer two and a half inches in circumference, circular, and well defined, with red and thickened edges. Near it, extending along the ileum, there were eight or ten ulcers, of various extent, but not perforating. They appeared not to extend beyond the mucous membrane; there was no inflammation around them, and their edges seemed disposed to cicatrize.

II.—A man, aged 22.—20th March, 1822.—Had headach and flushing suffusion of the eyes; white tongue, thirst, quick pulse, bowels open, and no complaint of the belly. 21st. Slight pain of the belly, which was relieved by leeches and a glyster. All the symptoms then subsided; the pulse came down gradually; and, on the morning of the 28th, he was considered as convalescent. Having then exceeded in animal food, he was seized with rigors, followed by fever and some delirium; pain in the region of the cæcum; stools frequent, liquid and brown; some relief from leeches; but the symptoms returned in the night with great severity; and he died in the morning of the 29th. Dissection.—Brown fetid matter in the cavity of the abdomen, mixed with flocculi; small intestines red. In the ileum, six inches from the cæcum, there was a perforation the size of a writing-quill, connected internally with an ulcer the size of a 30 sous piece. The mucous membrane around it was inflamed, and presented, in several places, red projections well defined.

III.—A young man of 17.—13th October, 1822.—Was seized with oppressive and general uneasiness, heat of skin, and loss of appetite. 16th. Continued in the same state, with foul tongue and thirst. Bowels rather slow; no complaint of belly; continued without any other symptom to the 22d; bowels moved once in the day; tongue cleaning; pulse continued frequent, but moderate. 23d. Some increase of fever, with pain of the abdomen increased by pressure; two liquid stools. In the night the pain became extremely violent, with much bilious vomiting. 24th. Great pain and tenderness of abdomen; small frequent pulse; quick breathing; nausea and occasional vomiting; no stool. 25th. Sinking, with less suffering; belly tumid and tense, but less tender: vomiting continued; no stool. Died in the afternoon. Dissection.—The abdomen contained a turbid puriform fluid, mixed with flocculi; extensive adhesions of the intestiness. In the ileum, ten inches from the cæcum, there was an opening perforating the intestine, and communicating with an ulcer of the mucous membrane, five lines in diameter. Betwixt the ulcer and the cæcum there were numerous pustular elevations covered by the mucous membrane, and three or four irregular elevations of a grey colour, an inch or more in diameter.

IV.—A woman, aged 26.—Feverish, with headach; spasms of the throat, and a convulsive motion of the lower jaw; quick breathing, with rattle in the throat; some cough and bloody expectoration; frequent pulse, and some delirium. In the night of the 10th day of the disease, was attacked with violent pain of the belly, which continued on the 11th day, with distention and great tenderness; quick feeble pulse; paleness; tongue dry, and partly black; bowels slow. In the night, vomiting began. 12th day. Sinking, with continued nausea;

numerous loose stools; epigastrium extremely tender; pulse very small. Died next morning, having passed the night with great distress and constant vomiting. Duration of the peritonitis, from 50 to 54 hours. Dissection.—Soft and recent adhesions of the intestines; some inflammation of the omentum, with adhesion to the intestines; much turbid puriform fluid in the abdomen, mixed with flocculi. In the ileum, 3 inches from the cæcum, there was a perforation two lines in diameter; and some inches from it, two smaller openings. Internally they all communicated with ulcers, and besides these, there were several other ulcers not penetrating, amounting to about ten, in a space of 18 inches of the intestine. Their margins were generally irregular, and somewhat elevated, and the bottom of them was formed by the muscular coat. The mucous membrane of the part was thickened and soft. The mesenteric glands corresponding to the diseased portion were much enlarged and red.

V.—A man, aged 25.—Irregular attacks of chills and heat; impaired appetite; uneasiness after eating; costiveness; but no pain of the belly, and no frequency of pulse. After being in this state rather more than three weeks, he was suddenly seized in the night with violent pain of the abdomen, much increased by pressure, and by the least motion; quick small pulse; and, after some hours, vomiting. During the day, the vomiting subsided; the pain continued; pulse 145, and small. Died on the following day, about 36 hours from the attack. Dissection.—Adhesion of the intestines, and fetid fluid in the abdomen, as in the other cases. In the ileum, 12 inches from the cæcum, there was a perforation 2 lines in diameter, communicating internally with an ulcer. Along the lower half of the small intestine, there were numerous elevated portions of the mucous membrane, from 6 to 13 lines in diameter, of a grey colour, variegated with blue, from one-half to three-fourths of a line in elevation. At the lower part, many of these spaces presented various degrees of ulceration; and, still lower, were found deep penetrating ulcers. Where the ulceration was small, the mucous membrane around it had the character of these elevated portions. Where the ulceration was more extensive, the surrounding membrane had a kind of grey puffiness. In one of these ulcers was the perforation.

VI.—A man, aged 30.—Had enteritic symptoms, with fever, but not severe. Bowels moderately open. After three days was seized with violent pain in the hypogastric region, with vomiting, and died in 36 hours. Dissection.—Extensive adhesion to the intestines; mesenteric glands enlarged and red; a perforation of the ileum five inches from the cæcum, communicating internally with an ulcer. The lower two-fifths of the small intestine presented numerous diseased portions of the mucous membrane, of two kinds. Those of the one kind were grey, variegated with blue, formed by thickening of the membrane; some of them with slight ulceration. Those of the other kind were more prominent, from a line to a line and a half in elevation, with or without ulceration. Those at the lower part gradually degenerated into deep defined ulcers, and the mucous membrane around them was generally softened. There was also an ulcer of the inner surface of the stomach, near the pylorus.

VII.—A man, aged 23.—Had suffered repeated attacks of diarrhœa, with fever, but not severe; had been ill with one of these attacks for fifteen days; stools numerous, sometimes twenty in a day; thirst; heat; anorexia; and some fever; but no pain of the belly. After another day or two, the fever increased, with some delirium in the night; shiverings; stools less numerous. Next day, constant delirium, with shivering; belly distended and slightly tender. Died the same day. DISSECTION.—Intestines distended and adhering extensively. Six inches from the cæcum, there was a perforation of the ileum, communicating with an ulcer; near it there were three or four other ulcers not penetrating; and along the whole course of the small intestine there were numerous diseased portions of the mucous membrane like those described in the former case.

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1. *Recherches Physiques, &c.* Researches on the Properties and Functions of the Nervous System in Vertebrated Animals. By M. FLOURENS. *Archives Générales de Medécine, Juillet*, 1823.
2. *Rapport fait à l'Académie, &c.* Report delivered to the Academy of Sciences at Paris, on the Experiments of M. Flourens. By Baron CUVIER, and Others of its Members. *Journal de Physiologie, Octobre*, 1823.
3. *Expériences, &c.* Experiments on the Functions of the Nervous System. By Professor ROLANDO of Turin. *Ibid. Avril*, 1823.
4. *Analyse des Expériences, &c.* Analysis of Experiments on the Nervous System of Man and Animals, published in Italy in 1805, and repeated in France in 1822. By M. GOSTER. *Archives Générales de Medécine, Mars*, 1823.
5. *Recherches Expérimentales, &c.* Experimental Researches on the Nervous System. By M. FODERA. *Journal de Physiologie, Juillet*, 1823.
6. *Expériences sur les Fonctions, &c.* Experiments on the Functions of the Roots of the Spinal Nerves, and on the Seat of Motion and Sensation in the Spinal Cord. By M. MAGENDIE. *Ibid. Tom. II. & III., passim.* 1822–3.

(From the Edinburgh Medical and Surgical Journal for January, 1824.)

No subject has excited deeper and more universal interest among the present physiologists of France, than the properties and Functions of the Nervous System. Many individuals, both of rising talent and of established fame, have, within these few years, devoted their labours to experimental inquiries on the

subject. And here, as well as in other branches of physiology, no sooner have hypothetical fictions been laid aside, and experimental reasoning made the only legitimate mode of investigation, than the science has been enriched with many interesting facts, and several brilliant discoveries. The honour of these discoveries belongs chiefly to the physiologists whose names are placed at the beginning of this article. But it is exceedingly difficult to assign to each of them his precise share of merit. For as their researches have been carried on about the same time, guided by the same principles, and directed towards almost the same objects, it is not wonderful that they have often encroached on one another's territories, and that some of them have occasionally arrived at results almost precisely similar.

This concomitance of pursuits among so many persons is not, we apprehend, the effect of mere chance. At one time, it seems to have been an understanding among the scientific in general, that, when a man was lucky enough to strike out a new path of inquiry, had favoured the world with some of his discoveries, and pledged himself to prosecute them, he was to be allowed to pursue his course without disturbance or encroachment. And such, we believe, is still the understanding in Britain. Not so in France: There, as soon as any one has opened a new field of discovery, and gathered up the produce of a part of it, his brethren on all hands conceive themselves entitled to enter it also, and to partake in the harvest along with him. We shall not attempt to legislate as to the right of property under these circumstances. Although the practice is probably unfair, as regards the original discoverer, and is certainly at variance with several well-known analogies; yet no one can entertain a doubt that it must benefit science, in the first place, by exhausting the field of inquiry much sooner and much more completely, and next, by furnishing a good criterion of the value of all their researches, in the contrast and comparison of them with each other. Some of these conceptions are conspicuously illustrated by the history of the inquiries, of which we now propose to lay an abstract before our readers.

About the beginning of 1822, M. Flourens, a young French physician, laid before the Parisian Academy the first fruits of his physiological labours, being an Inquiry into the Properties and Functions of the Nervous System. In this work he undertook to prove, that the nerves, spinal cord, medulla oblongata, and corpora quadrigemina, are alone the seat of those impressions which give rise to muscular contractions; that the spinal column combines or generalizes these contractions, so as to produce motion of the joints; that the cerebellum regulates the motions of the joints, so as to produce the actions of running, walking, standing, flying, and so on; and that the cerebral lobes

are the seat of sensation and volition. His doctrines soon became the object of much interest in the medical coteries of Paris, partly on account of their intrinsic importance, and partly because it was discovered that some of them had been advanced thirteen years before, by an Italian of the name of Rolando, then Professor of medicine at Sassari in Sardinia. The obscurity of Rolando's situation had kept his researches entirely out of the view of the French school, till the publication of Flourens' discoveries. They were then displayed with much ostentation by a Dr. Coster, one of Rolando's former pupils; and of course the young Frenchman was at once accused of plagiarism. The charge of dishonesty, however, appears to be wholly without foundation; and of this the memoirs of the two rivals afford internal evidence. For, although many of their experiments closely resemble each other, the conclusions which Flourens has drawn from them are widely different from those of Rolando. In fact, Flourens might have quoted all Rolando's treatise, without materially diminishing the value of his own discoveries; and in such circumstances, it does not appear likely that he would venture on the commission of the crime of which he has been accused.

The memoir laid by him before the Academy of Sciences, contains but a part of his observations; and he has announced his intention of extending them, and of prosecuting his researches throughout the rest of the nervous system. He seems, however, to have been prevented from executing this purpose by a long and severe illness; and, meanwhile, his countrymen, in conformity with the principle already mentioned, have repaired in flocks to the field he has thus temporarily relinquished. The object of the subsequent observations is to present a combined view of all their inquiries and discoveries, and so to attempt an estimate of our present state of knowledge with regard to the functions of the nervous system. Our observations, as justice demands, will be arranged according to the order pursued by M. Flourens.

M. Flourens very properly sets out with an attempt to reform the present nomenclature of the nervous properties and functions. But, unfortunately, he concludes by leaving it involved in greater confusion than ever. When a nerve is pricked in a living animal, two distinct phenomenons are observed to follow,—contraction of the muscles it supplies, and the sensation of pain. But the nerve itself does not contract; neither does it experience sensation. For if a ligature be applied on each side of the part that is to be pricked, no contractions take place in the nerve or elsewhere; and the animal does not express pain. The nerve has therefore the property of receiving a peculiar impression, which is conducted in both directions

along its course, producing contractions at its extremities, and sensation somewhere at its origin in the great nervous centre, the brain and spine. Glisson was the first who gave to the phenomenon of muscular contraction, under the application of stimuli, the name of *Irritability;* but he confounded with it under the same name, the phenomenon of contraction from simple elasticity. Haller afterwards restricted it to the property of contracting briskly, inherent in the muscular fibre only. Bichat more lately substituted for it the term *Contractility;* which, however, he again extended so as to comprehend the property of elastic contraction. The word *Sensibility* was originally applied to the property, peculiar to the external nerves, by which we become acquainted with the presence and qualities of surrounding objects. The physiological system of Stahl, (who thought that the soul governed every action in the body, voluntary and involuntary,) and likewise that of Bichat, made it include "every nervous co-operation accompanied with motion, even though not attended with perception." Farther, owing to the ambiguity of the words in ordinary language, the nerves have been too generally said to be irritable and sensible, though they are merely organs for conveying the impressions which are to call forth these properties elsewhere. M. Flourens, after noticing imperfectly these vices in our nomenclature, proceeds to fix the meaning of the terms he is to employ in his investigations. The term *contractility* he uses to denote the property, inherent in muscular fibre only, of undergoing brisk contractions under the application of stimuli; and the term *sensibility*, to imply the property of experiencing *sensations*, according to the sense in which that word is familiarly used in metaphysics. This is all very correct. But he has made use of the much tormented word *irritability*, in the most arbitrary and unjustifiable manner, to indicate the property possessed by the nerves, of receiving the peculiar impressions, which give rise to sensation and contraction; "the property of provoking sensation and motion, without experiencing them, is precisely what I call irritability." The idea of giving a separate name to this property is certainly a happy improvement in physiology. But his choice of a term could hardly have been more unfortunate. The Commission appointed by the Academy of Sciences to report upon his Memoir, after noticing the impropriety of selecting a term already so ambiguous, have suggested, that, instead of calling the nerves irritable, he should say they are the conductors of sensation and irritation. But, besides necessitating a constant and irksome circumlocution, this phrase is equally inexact with the other; for, assuredly, before a nerve can conduct sensation or irritation, it must receive it; which is quite equivalent to pronouncing it sensible and irritable. In the re-

marks which follow we shall venture to substitute the term *impressibility* for that of irritability chosen by Flourens; by no means presuming that it is the best which can be found, but trusting that it cannot lead to any mistake, either by implying a theory or by indicating any other nervous property.

These indispensable preliminaries having been settled, we shall proceed to analyze the Memoir as it is contained in the Archives Générales for last July.

M. Flourens first shows, by the familiar experiment of tying two ligatures on a nerve, and pricking it above, below, and between them, that the nerves are neither contractile nor sensible, but that they are essentially impressible (irritable). He next shows, by dividing the spinal cord in two places, and pricking it above, below, and between them, that this part also of the nervous system is impressible, but can neither contract nor feel. From the other results of this experiment, results which are so familiar that we need not enumerate them, he also concludes, that "the spinal cord is the organ by which is effected the dispersion or generalization of impressions (irritations)." This language is mystical. The Commission of the Academy seem to think that he holds the spine to be the medium, through which sympathies are established; and very properly deny that his experiments can fairly lead to such an inference. In another part of the Memoir, however, he states that the spine is the organ by which the muscular contractions are combined so as to produce motion of joints or limbs; and he proves this by referring to the general motion excited in the hind legs by irritating them, after the spinal cord has been divided in the middle of the back.

The next object of his experiments is to discover in what parts of the nervous system the property of Impressibility resides. And he proves that it belongs only to the nerves, spinal cord, medulla oblongata, and corpora quadrigemina; and that the lobes of the brain, even the corpora striata and optic thalami, and likewise the whole mass of the cerebellum, do not possess it. In the first place, the nerves every where possess it. The most extreme subdivision which can be traced, if pricked or otherwise injured, gives rise to contraction of the muscles it supplies, and likewise to the sensation of pain. Secondly, this property does not extend higher up than the corpora quadrigemina. The whole brain proper and cerebellum may be pricked, or slashed, without exciting muscular contractions any where, and without causing pain; and they may be removed altogether, without occasioning the loss of motion, or even permanently diminishing it. But if the superior corpora quadrigemina be pricked, some agitation is caused; and the nearer the instrument approaches to the medulla oblongata, the more

distinct is the expression of pain, and the more manifest are the muscular contractions. Rolando too had observed, that injuries of the brain proper produced only a kind of stupor, but that convulsions supervened when the optic thalami and corpora quadrigemina were intersected (*Arch. Gén.* I. 364.). He confesses, however, that he could not ascertain the precise effects of injuries of these organs (p. 366); and he nowhere draws any inference as to the latter being the upper limit of nervous Impressibility. The facts advanced by Flourens, besides receiving the solemn sanction of the Academy's Commission, have been since abundantly confirmed by Fodéra, who observes (*Journ. de Physiol.* III. 192), that in the mammalia the cerebral lobes may be cut, pricked or torn, without exciting pain or muscular contractions; but if the instrument be carried farther back than the optic thalami, so as to intersect the superior corpora quadrigemina, both of these phenomena at once take place. And he likewise found, that wounds of the cerebellum were as little capable of causing pain or contractions, though they were followed by certain singular motions, the import of which will be noticed presently. As to the effect of pressure on the Encephalon, the same author, M. Fodéra, has furnished the clearest evidence, that pressure on the cerebral lobes or the cerebellum, causes agitation, stupor, or apoplexy, not by affecting these parts themselves, but by compressing indirectly the medulla oblongata. For the brain or cerebellum may be squeezed laterally till it is even crushed, without any lethargy supervening. Some degree of stupor indeed is observed, when the anterior lobules of the brain are pressed downwards, and still more when the posterior lobules or the cerebellar lobes are similarly treated; but the same effect is produced if these parts be previously removed, and a firm paste substituted for them; and therefore no doubt can exist that the stupor is owing to indirect compression of the medulla oblongata (Ibid. 195.). These facts will serve to explain several obscurities which hang over some subjects of investigation to be noticed hereafter.

M. Flourens then turns his inquiries to the Seat of Sensation and Volition, that is, the part of the nervous system at which impressions proceeding from its extremities must arrive, before they can produce Perception and subsequent efforts of the Will. The faculties of Perception and Volition do not reside in any part of the nervous system, which we have found to be endowed with Impressibility. For, if a section be made at any point betwixt the superior corpora quadrigemina and the extremities of the nerves, the animal feels no impression made below the section. These faculties must therefore reside somewhere higher up in the encephalon. And M. Flourens thinks he has established by experiment that they are situated in the cerebral

lobes. The position seems to be satisfactorily established, so far as concerns the senses of sight and hearing; but his experiments do not by any means warrant him in extending it, as he has done, to the other senses, and to volition.

When the cerebral lobes are removed in any animal, it evidently loses at once the senses of sight and hearing. If, on the other hand, the cerebellum be removed, the brain proper remaining entire, these senses are unimpaired. If only one hemisphere of the brain proper be cut out, the sight of the opposite side only is lost. It is an interesting fact, however, and worthy of special notice, as illustrating what has been said concerning the seat of Impressibility, that, although the sight is lost, the contractility of the iris continues unaffected. When the cerebral lobes are pricked even so deep as the optic thalami, the iris remains unmoved; if they are cut out, it is not paralyzed. But the moment the superior corpora quadrigemina are touched, it contracts convulsively; and whenever they are dug out, care being taken to leave no portion of them adhering to the optic nerves, it immediately dilates, and entirely loses its contractility. These facts, conformable with the assigned limits of nervous Impressibility, show the incorrectness of the generally received opinion, that the integrity of the optic thalami is essential to the integrity of the motion of the iris. This opinion had been derived from the well-known effects of pressure on the optic thalami and their vicinity. But it is easy to see that pressure can hardly be produced there, without also indirectly compressing the optic nerves. The observation of Flourens, that the sensation of visible objects and of sound resides in the lobes of the brain proper, is entirely new. It is included, indeed, in a more general proposition to be stated immediately, to which Rolando had been led by his experiments. But the Italian nowhere lays it down explicitly; and besides we shall find, that his experiments are liable to a serious fallacy, in consequence of which he cannot be held to have established even the general proposition alluded to. Moreover, he does not even hint that the optic thalami are not necessary to the contractility of the iris. On the contrary, his section was always made before the thalami; and he expressly mentions that, when these bodies were cut into, the pupils dilated, and ceased to be contractile (*Archives*, I. 368.). As to the correctness of M. Flourens' facts and inferences, we can only say, that his experiments were repeated before a Commission of the Academy of Sciences, consisting of Cuvier, Portal, Berthollet, Pinel, and Duméril, who agree that he had made his proposition good.

Besides the effects just mentioned, Flourens observed, that the loss of the cerebral lobes was followed by a kind of lethargy or deep sleep; from the peculiar symptoms of which he draws

the conclusion, that this part of the nervous system is the seat, not only of all other sensations, but likewise of Volition. As that conclusion, however, does not seem to be so legitimate, it is necessary to state, more in detail, the principal experiments from which it has been drawn. When the cerebral lobes were removed in a pigeon, without injuring the corpora quadrigemina or cerebellum, the animal was immediately seized with more or less feebleness; which effect, however, gradually diminished, till it soon became evident that motion was nowhere materially weakened. But the senses of seeing and hearing, as formerly noticed, were extinguished, and a state of stupor was induced, resembling profound sleep. The animal remained calm, and as if abstracted; did not move of its own accord; and, when it encountered an obstacle, struck it again and again, without ever trying to avoid it. Yet it preserved its equilibrium, struggled if held, resisted every effort made to open its beak, swallowed water dropped into its beak, walked about when pushed, and flew when thrown into the air; nay, the slightest irritation evidently teased it (*Archives*, II. 352). Analogous results were obtained with frogs. Now, these phenomena by no means justify the inference, that all sensations, as well as volition, are lost. They are impaired; but the symptoms unequivocally show, that the animal could both feel and will. Yet sensation and volition certainly are impaired; or perhaps we should rather say, that the memory seems to be materially injured, so that impressions made on the organs of sense excite but obscure or transient perceptions, and consequently but feeble efforts of volition.

Such is nearly the amendment which the Commission of the Academy advise M. Flourens to make on the nature and terms of his inferences. They remark, that he has amply established his doctrine with regard to the seat of the sensation of sight and sound; but that it was impossible he could put it to the test as regarded the senses of taste and smelling; and that it is not at all extensible to the sense of touch throughout its numerous modifications. "We shall be content with holding," say they, "that the cerebral lobes are the sole receptacle, where impressions on the senses of sight and hearing become perceptible to the animal. If we were to add any thing to this concession, we should say, that they are also the part where all sensations whatever take a distinct form, and leave durable traces and recollections; in a word, that they are the seat of memory, by which property they supply the animal with the materials of judgment." (*Journ. de Phys.* II. 381.)

The experiments of Rolando, conducted nearly in the same manner with those of Flourens, had also led him to form the same opinions as to the functions of the cerebral lobes; namely,

that they are the seat of sensation and volition. He found, that, after they were destroyed in cocks or crows, these birds generally stood motionless for hours together, as if plunged in deep sleep, and might be pricked without giving any sign of sensibility; but that they preserved their equilibrium, sought for support, and could be made to walk when struck violently. Similar effects were also occasioned in kids, lambs, and guinea-pigs. Although in general, therefore, he obtained even more imperfect signs of sensation and volition than M. Flourens, nevertheless his own account of his experiments supplies sufficient evidence that neither of these faculties was extinguished. The differences observable betwixt the results obtained by the two physiologists are probably to be attributed to varieties in the mode, or exact seat, in which the section of the brain was performed. Magendie believes that Rolando, in his experiments, did not always prevent or make allowance for the effects of pressure from effused blood; and the same observation may perhaps be also applied in some degree to those of Flourens. For he observes that his animals, after the abstraction of the cerebral lobes, did not move of their own accord; whereas Magendie found that, on taking care to prevent extravasation and compression, young rabbits, as well as young jackdaws and magpies, ran about and jumped vigorously and spontaneously, after the removal of every part of the brain a little in front of the optic thalami (*Journ. de Physiol.* III. 155).

Our authors do not always observe due precision in describing the exact seat of the section of the cerebral lobes; and it is likely that even trivial deviations will cause essential differences in the phenomenon. Magendie remarked, that if the section was made immediately before the optic thalami, and not at a short distance before them (as in his experiments just noticed,) the vigorous motions of the animals were at once suspended, they fell down on the side, the head was drawn back, and the limbs became rigidly extended (*Ibid.* 156). Rolando, who generally made his section at the same point, seems also to have occasionally observed catalepsy ensue (*Archives*, I. 365). Magendie further adds, that when the seat of section was then carried backwards, so as to remove the optic thalami, the limbs regained their suppleness, and the head its straight direction; motion, however, continuing suspended. From these facts he conjectures that the optic thalami are somehow connected with the power of motion; and he proposes to commence an inquiry, with the view of determining the nature of this connexion. Now, it is obvious that, if his experiments are correct, and his conjecture should turn to account, M. Flourens must modify his doctrine as to the limits of nervous Impressibility. Yet this latter physiologist nowhere noticed the differences observed by

Magendie. He does not always mention, indeed, the exact seat of operation. But judging from his doctrine, and the description he has sometimes given of the place of the section, he must have removed the brain in all cases behind the optic thalami. And farther, it will be remembered, that his conclusion as to the limits of nervous Impressibility, has been verified by several other experimenters, and sanctioned by a Commission of the chief physiologists in the Parisian Academy.

We come now to mention the most interesting and extraordinary of all M. Flourens' discoveries, namely, that the cerebellum is the Regulator of Motion; or, in other words, the organ by which the muscular contractions, previously combined by means of the spine to constitute movements of the joints, are further associated and regulated, so as to produce the actions of standing, walking, running, leaping, flying, swimming. His experiments on this head are very pointed. When a slice is cut away from the cerebellum of an animal, the injury is at once followed by great weakness. This differs in degree with a variety of circumstances, being greatest when the quantity removed is greatest, and always more striking in the mammalia than in birds or reptiles. The same effect we have already seen to follow the removal of the lobes of the brain. It evidently depends on the sympathetic connexion of the several parts of the nervous system, in consequence of which no part can be injured without a shock being imparted to the rest. But in a short while the animal regains its strength; and then the senses are found to be entire: It shrinks from the slightest threat or violence offered to it, and the motions of the limbs are generally vigorous and frequent; but its movements are exceedingly irregular, and, as it were, embarrass each other; and though volition is evidently exerted, no corresponding act succeeds; it strives to escape when irritated, yet it can neither fly, nor run, nor leap, nor walk; nay, when the whole cerebellum is lost, it cannot even stand. If that organ be removed gradually in successive thin slices, the progressive circumspection of the locomotive actions is very remarkable. On removing only the first layers of the cerebellum in the pigeon, the sole effect produced is some weakness and a kind of hesitation in its gait. When the sections have reached the middle layers, it staggers much, and assists itself in walking with its wings; yet it sees and hears perfectly, seems cheerful, and does not express pain. The sections being continued farther, it is no longer able even to preserve its equilibrium without the assistance of its wings and tail; its attempts to fly or walk resemble the fruitless efforts of a nestling, and the slightest touch tumbles it over. At last, when the whole cerebellum is removed, it cannot support itself even with the aid of its wings and tail; it makes violent efforts

to rise, but only rolls up and down; then fatigued with struggling, it remains for a few seconds at rest on its back or belly, and then again commences its vain struggles to rise or walk. Yet all the while its sight and hearing are perfect; the slightest noise, threat, or other stimulus at once renews its contortions. In these struggles and contortions there is not the slightest appearance of convulsions. The same effects were observed by Flourens in the guinea-pig. When the last layers of the cerebellum were removed, it lost the power of walking or standing, lay down on its belly, moved its legs as if running, and made vain efforts to rise. The inference he has drawn, therefore, from the foregoing facts is, that the cerebellum is the organ by which all the locomotive actions are regulated.

This discovery is entirely original. Rolando, in particular, for whom the merit of it has been claimed by his pupil Coster, had not made the most distant approach to it. On the contrary, he maintains that the cerebellum is the organ on which motion depends altogether; and at first sight, his experiments are conclusive enough to this effect. For he found that, when he removed the half of the right lobe of the cerebellum in a cock, it was immediately struck with palsy of the same side, so complete that it could not execute a single movement, with the right wing or leg; and when both cerebellar lobes were removed in a kid, it lost the power of motion every where. Three circumstances, however, render these experiments inconclusive. First, he does not seem to have made allowance for the temporary debility which immediately follows the injury. Secondly, his own expressions make it evident, that he could not prevent the effusion and accumulation of blood in the cavity of the skull; so that the effects of the loss of the cerebellum were complicated with those of pressure on the medulla oblongata. And, lastly, he may with justice be suspected of inaccurate observation; for he remarks, that the kid lived twenty-four hours without the cerebellum, in a state of complete paralysis of both sides; a state, in which it is not easy to conceive, how the respiration could be carried on so long. The doctrine laid down by Flourens has moreover been sanctioned by the Commission of Inquiry appointed by the Academy of Sciences. It has also been more or less confirmed both by Magendie and by Fodéra. The former, after noticing the extreme difficulty of making a conclusive experiment on the cerebellum, remarks, that all he had been able to make out was, that every severe injury of it took away the power of advancing, and excited a constant tendency to walk, run, or swim backwards (*Journ. de Physiol.* III. 157). Fodéra also found, that animals thus mutilated sometimes showed the same tendency to retreat; but that more commonly they fell down, agitating their limbs and unable to rise, and oc-

casionally staggered, jumped, and tumbled in a strange irregular manner (*Ibid.* 195). These results are so similar to the phenomena witnessed by Flourens, that his facts may be admitted as genuine; and in that case we cannot help allowing, that his inference as to this function of the cerebellum is legitimate.

Thus, then, the property of nervous Impressibility is limited to the corpora quadrigemina, medulla oblongata, spinal cord and nerves; the integrity of the optic thalami is not essential to the Contractility of the iris; the sensations of sight and sound reside in the cerebral lobes, and there also all other sensations acquire distinctness and durability; the spinal cord combines the muscular contractions so as to produce motion in the joints; and the cerebellum regulates these movements, and unites them so as to constitute the actions of standing and locomotion;—such are the discoveries of Flourens. On a subject of so much nicety and intricacy, the medical world will naturally receive, not without much wariness and hesitation, doctrines so precise, so important, and so unexpected. We have endeavoured in the foregoing remarks to appreciate their value impartially, so far as their novelty will permit. We shall not now attempt to offer any additional arguments for or against their validity; being satisfied that, as they have been deduced by a system of experimental reasoning, nothing but new experiment can be brought forward on either side with effect. Meanwhile, however, it may be right to notice shortly the arguments which have been levelled against them by a man, who, since his own interest is deeply staked in their destruction, may be justly regarded as their most mortal antagonist. M. Gall, incensed to find his organs of love, philoprogenitiveness, and many other propensities and noble faculties, all snatched from his hands to make up one poor, paltry machine for regulating the baser bodily motions, and another equally contemptible for conveying to the mind the impressions of sense, has vehemently resisted such an appropriation, and endeavoured to obstruct his adversary's progress with five objections. First, removal of parts of the brain is not a good mode of determining their special functions. Secondly, animals do not survive such injuries long enough to show the true alterations which have taken place in their faculties. Thirdly, one part of the brain cannot be removed without injuring others, and the effects of the injury are propagated beyond its precise seat. Fourthly, when he repeated Flourens' experiments, he did not obtain the alleged results (*Sur les Fonc. du Cerv.* III. 379). To these objections, Coster, the pupil of Rolando, replies; First, that removal of parts of the brain is the very best mode of determining their special functions, and is essentially nothing else than an example of true experimental

analysis; Secondly, that Rolando's birds and quadrupeds survived the loss of the brain or cerebellum twenty-four or thirty-six hours, and reptiles several months; Thirdly, that the fallacy, arising from the injury propagating itself to the adjacent parts, may be obviated, and has been obviated, by observing the effect of the reciprocal destruction of these parts; Fourthly, that M. Gall should not venture to uphold his few, meagre, imperfect and most prejudiced experiments, before the careful and varied researches of Flourens and Rolando, and still more the deliberate approval of the illustrious Cuvier and his no less distinguished Coadjutors (*Archives*, I. 413). Gall's fifth objection is a very odd one, for such a fanciful and reckless theorist to think of; namely, the opinion, that the cerebellum is the regulator of the locomotive movement, must be held rather as a singular idea than as a true discovery. In the present state of matters, it appears to us no small proof of the validity of Flourens' doctrines, that so acute and so captious a controversialist, on a point so injurious to his system, has made so weak an assault, and has been reduced to such sorry subterfuges.

We shall now leave the discoveries and opinions of Flourens to the test of future observation, and turn to the inquiries, of M. Magendie and M. Fodéra into the distribution of the nervous properties throughout the different parts of the spinal cord, and the nerves which arise from it. The discoveries of Magendie are not less important or less extraordinary, than those we have hitherto been considering. For he thinks he has made out, that the posterior twigs of the nerves and the posterior cords of the spine are intended for conveying sensation only, while the anterior roots of the nerves and the corresponding cords of the spine only transmit the impressions which call forth muscular contractions.

Actuated, he assures us, by no preconceived ideas, but by pure unbiassed curiosity, he succeeded, after many failures, in dividing, within the vertebra *theca* of a young dog, the posterior roots of the nerves which supplied one hind leg; and was not a little astonished to find, that the sensibility of that limb had been completely destroyed, while its motions remained unaffected. After repeating this experiment several times, and uniformly obtaining the same results, he naturally thought next of trying the effect of dividing the anterior roots only. Many obstacles prevented the accomplishment of this operation. But at last his attempts were crowned with success; and he was gratified with finding, that now the limb was paralyzed, while its sensibility was unimpaired. The same set of experiments was tried, with the same results, upon the anterior and posterior roots of the nerves of the fore leg (*Journ. de Physiol.* II. 276). Analogous effects were afterwards witnessed on pinching or

pricking these different roots. Yet the latter test rather favoured the idea, that the fasciculi for motion had also a slight power of conveying sensible impressions, and those for sensation a slight power of exciting muscular contraction; and this idea was farther confirmed by the effects of galvanism. For when the anterior fasciculi were pinched, pricked or galvanized, besides violent contractions, slight sensation was produced; and the contrary took place when they were applied to the posterior fasciculi. The most remarkable proof of the anterior fasciculi being alone intended for exciting motion, was afforded by dividing them in an animal under the influence of nux vomica. This deadly poison, as every one knows, excites most violent convulsions. When the posterior roots of the nerves of a limb have been divided, that limb, like the rest of the body, is nevertheless violently convulsed; but if the anterior roots have alone been divided, it remains at repose amidst the general agitation (*Ibid.* 336). From these diversified experiments, therefore, Magendie considers himself warranted to infer, that the posterior roots of the spinal nerves are intended (at least especially) to convey sensible impressions, and the anterior ones to convey the exciting cause of muscular contraction.

In a subsequent inquiry, he has extended these doctrines to the parts of the spinal cord corresponding with the anterior and posterior nervous roots. That is, when he pricked the spine between the posterior roots, he excited sensation only; when he did the same to the anterior surface, he merely excited motion. He farther remarked, that the impressibility of the spinal cord was much more delicate than that of the nervous roots, which have their origin in it; the pain and contractions produced by pricking it being much more violent. But the central part is scarcely impressible at all; a stilet may be thrust along the centre of the whole spine, without impairing either sensation or motion. (*Ibid.* III. 153.)

These observations were scarcely published, when the merit of having made the fundamental part of them thirteen years before was claimed by Mr. Charles Bell of London. In a pamphlet, circulated only among his private friends, and entitled, *Idea of a New Anatomy of the Brain*, that gentleman remarks, "On laying bare the roots of the spinal nerves, I found that I could cut across the fasciculus of nerves which took its origin from the posterior portion of the spinal marrow, without convulsing the muscles of the back; but, on touching the anterior fasciculus with the point of the knife, the muscles of the back were immediately convulsed." p. 22. This is certainly Magendie's very experiment. But Mr. Bell does not seem to have drawn any positive or general inference from it; neither has he attached to it the importance he would have done, had he been

aware of its tendency; otherwise he would hardly have confined the knowledge of it to the narrow circle of his private friends. Yet Mr. Bell does not seem to have entirely lost sight of his original experiments; for in a communication addressed to Dr. Cooke, and published by that gentleman in his work on Palsy, he observes, "The nerves of sensation and motion are bound together in the same membranes, for the convenience of distribution; but there is reason to conclude, that they are distinct throughout their whole course, and as distinct at their origin in the brain, as in their final distribution to the skin and muscles."*

We apprehend, therefore, that if the opinion as to the function of the different parts of the spine and nerves prove correct, although the honour of perfecting it belongs exclusively to M. Magendie, yet the merit of having first made it must be surrendered by him, at least in part, to Mr. C. Bell. And it is with pleasure we observe, that in a late number of his Journal, the French physiologist has done ample justice to the claims of our countryman.

But, of course, it is far too singular and too important a discovery, to be admitted without farther and repeated confirmation by other physiologists. The only other person who has hitherto published any experiments on the subject is M. Fodéra. He has sufficiently confirmed the doctrine, so far as concerns the roots of the nerves. But his experiments on the spine itself have been left by him in so incomplete a state, that it is scarcely possible to apply them with precision to any purpose. Yet they are probably sufficient to show, that Magendie's opinion on the difference of properties betwixt the anterior and posterior cords, must receive some modification. Thus he found, that at the middle of the back, the division of the two anterior cords of the spine destroyed the sensibility of the hind legs, and not their motion, as we should have predicted; while a section of the middle of its posterior surface, for two-thirds of its breadth, did not diminish their sensibility, but impaired their motion. Again, when the right posterior cord was divided in the region of the first lumbar vertebra, the sensibility of the right hind leg was diminished, while the power of motion continued; just as Magendie's doctrine led him to expect. But then, the power of motion was diminished in the left hind leg, while its sensibility was unimpaired. On the contrary, the very same effect was produced by an incision between the second and third cervical vertebræ, not of the right but of the left side of the cord. It would appear, therefore, that somewhere between the cervical and lumbar region, the four spinal cords cross each

* Cooke on Nervous Diseases, Vol. II. Part 1. 1821.

threads; which would have conveyed his vibrations and galvanic fluid so much more expeditiously, and admitted of such ready repair whenever they went out of order.

In the foregoing summary we have done little more than merely allude to the experiments of Mr. Bell and M. Fodéra on the functions and properties of the individual nerves. We have abstained from minuter inquiry, because the opinions of both of them must probably receive considerable modification from future experiment, and because many new discoveries remain to be made on the subject by the numerous physiologists at present occupied with experimental researches on the nervous system; so that, by a little delay, we have no doubt we shall ere long be able to present our readers with a much more interesting, precise, and stable body of doctrine, than could possibly be drawn up now.

Lectures on the Operative Surgery of the Eye; being the Substance of that part of the Author's Course of Lectures on the Principles and Practice of Surgery which relates to the Diseases of that Organ: published for the purpose of assisting in bringing the Management of these Complaints within the Principles which regulate the Practice of Surgery in general. By G. I Guthrie.

(From the London Medical and Physical Journal for December, 1823.)

The first subject treated of in the work before us is the *Inversion of the Eyelids*, and the various operations that have successively been employed for its cure. We pass over the description and history of this disease, which are accurately and vividly given, but are too long for insertion. We find our author in part giving to Mr. Crampton the merit of having first pointed out the principal causes of this disease, and as having also indicated the proper method of cure; but, as Mr. Guthrie disagrees with that gentleman in some of the minuter points of his explanation, we shall give our author's summing-up in his own words:

1. "That the derangement of the eyelashes, constituting trichiasis, is frequently the consequence of disease; but seldom or never arises from unnatural formation, or from an accidental or too luxuriant growth of the cilia.

2. "The relaxation of the integuments, or a partial paralysis of the levator palpebræ, is a natural and otherwise healthy state of the eye and eyelids, are not primarily concerned in the formation of entropium, and never alone give rise to it; although, if other derangement take place, they may (by removing some power of resistance to it) assist in its more complete formation.

3. "That, in a general or complete inversion of the edge of the tarsus of the upper lid, the swelling of the external parts, and the spas-

modic action of the orbicularis palpebrarum, first tend to the formation of the disease, and which is completely established by the contraction of the angles of the lids, and the accidental inversion of such hairs as become stiff and matted by the vitiated discharge from the meibomian glands and conjunctiva.

4. "That the change in the curvature of the lid takes place principally from the contraction of the angles, whilst under the influence of the orbicularis, and not from the contraction of the conjunctiva, corresponding to the superior broad ligament which supports the tarsus, and maintains the shape of the upper eyelid.

"These conclusions do not, of course, apply to such partial cases of trichiasis as result from the formation of a cicatrix, tumour, or other direct and obvious cause, to which I have already alluded." (p. 15.)

The methods of remedying this distressing complaint are next described; and there are few diseases, observes our author, in which so little alteration in the method of operating has taken place since the time of HIPPOCRATES: but this remark does not appear to us to be borne out by the facts; for, although the *principle* has necessarily been the same in every age, the mode now in use is surely very different, and far superior to that practised by the Father of Medicine. We must be excused from enumerating the various plans that have been proposed to effect the same object. The reader will find the result of much research in this part of our author's work; but we must pass over this portion of the subject rather hastily, in order that we may detail the operation as recommended by Mr. Guthrie. We may, however, observe that the German writers are extremely divided as to the propriety of performing that operation, (namely, a removal of part of a fold of the skin of the eyelids,) by which a radical cure is effected, or the more simple one of occasionally removing the offending hairs. WELLER and BEER support this opinion, whilst Dr. JAEGER proposes the removal of the edge of the eyelid, including the cilia; but which, as our author remarks, differs in no respect from the operation recommended by Mr. Saunders many years prior to Dr. Jaeger's publication. Our author says (page 25,) that he has seen three patients on whom this operation had been performed: in all, the deformity was considerable, and the relief partial. Passing by an improved mode of operating introduced by Mr. Crampton, and some remarks upon the method proposed by Quadri, we come to the description of the author's operation, and which he recommends as equal to the cure of the worst cases.

"The operation I recommend, as equal to the cure of the worst cases, is to be performed in the following manner:—The head being properly supported, the eyelids are to be gently separated; the patient is to be desired to refrain from making any effort whatsoever, and the surgeon is to wait until he sees that the lids are perfectly quiescent. A small narrow knife, or one blade of a blunt-pointed scissors, is then to be introduced close to the external angle, and a perpendicular incision

made, of from a quarter to half an inch in extent, or of a sufficient length to render the eyelid quite free: the quiescent state of the lids, and especially of the orbicularis muscle, enabling the surgeon to cut closer to the angle than he otherwise could do, and thus to divide the ligament, or at least the extremity of the cartilage. Another incision is to be made, in a similar way, at the inner angle; but this should not include the punctum lachrymale, as I have never found it necessary to do so; and, although the tears may continue to pass through the lateral canal into the sac when the punctum has been included in the incision, they do not do so with equal freedom, and there is some observable deformity. The length to which the perpendicular incisions at both angles ought to extend, must now be decided upon by the appearance of the part; they must be continued, if necessary, by repeated touches with the scissors, until that part of the eyelid containing the tarsal cartilage is perfectly free, and is evidently not acted upon by the fibres of the orbicularis muscle which lie upon it. This frequently causes the incisions, and especially the internal one, to be longer than is usually supposed to be necessary. The part included in the incisions is now to be completely everted, and retained by the fore finger of the operator's left hand against the brow of the patient; when, if any lateral attachment be observed, acting upon, and drawing or confining the lid, it is to be divided, which is in fact still elongating the incision. On letting the eyelid fall on the eye, the edge of the tarsus and the hairs will frequently appear in the natural situation, in consequence of the relaxation of the angles which bound them down; but, if the tarsal cartilage has become altered in its curvature, this will be immediately perceived: it will turn inwards at its ciliary edge, and be completely bent at its extremities, more especially at the inner one, where it is more powerfully acted upon by the musculus ciliaris. On desiring the patient to raise the lid, he readily attempts it, but the action of the levator, in such cases of vicious curvature, causes the cartilage partly to resume its situation; and, on examination, the curve will be observed to be so permanently vicious for about an eighth of an inch at each extremity, and especially at the inner, that it cannot be induced to resume its actual situation. When this is the case, the cartilage is to be divided, exactly at the place where it is bent, in its length, and in a direction at a right angle with the perpendicular incision. The portion thus slit is only connected with the common integuments of the eyelid; and, although this incision scarcely exceeds one, and never two-eighths of an inch, at both extremities, and in general is only necessary at the inner, it enables the surgeon to remove the altered curvature of the part.

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"The operation being thus far accomplished, a fold of skin is to be cut away from that part of the eyelid included between the incisions; three or four ligatures are then to be introduced, and the divided parts from which the fold has been removed, are to be neatly brought together by the ligatures, each of which ought to be twisted, and then fastened to the forehead by several short slips of sticking-plaster, the ends being turned over the plasters near the hair, and retained in that situation, to prevent their slipping. In raising the fold of skin, care

should be taken to do it regularly with the fingers; it is also essential to the success of this part of the operation, that it be done as close as possible to the margin of the eyelid. It may then be grasped by the forceps of Beer,* which have transverse pieces, slightly curved for the purpose at their extremities, and close with a spring. The piece thus included, which need not be large, may be cut away at one or more strokes of a large pair of curved or straight scissors. The ligatures should be inserted first at each angle; and, when the vicious curvature is considerable, I not only pass it through the skin, but take care that the internal one shall include, at its lower part, the outer edge of the margin of the eyelid, which, from its firmness, retains that ligature much longer than those which are passed through the skin only, and tends to prevent the possibility of a relapse. The ligatures thus placed are to be equally drawn up on the forehead, until the eyelid is completely everted, when they are to be fastened as directed. In order to prevent any attempt at union but by granulation or a filling up of the incision, the edges are to be slightly touched with the sulphas cupri. The eye and eyelids are now to be carefully cleansed; a piece of lint, spread with the unguentum cetacei, is to be placed upon them; a small compress is to be put under the edge of the eye-bone and orbit; a retaining bandage covers the whole, and completes the different steps of the operation. When the disease is not considered of an inveterate nature, the ligatures may be introduced through the fold of skin, without cutting any portion away. They give little additional pain, and are infinitely more effectual than any other suspensorium with which I am acquainted, and they ought to be assisted by strips of adhesive plaster placed between them. The operation, accomplished with all the care I have described, will still fail, if equal attention be not daily paid to the subsequent dressing, on which, indeed, more depends than on the operation itself; so much, indeed, that I am disposed to consider inattention to it the most certain cause of failure. In more than seventy operations that I have performed, I have never known inflammation or other bad consequences ensue. The patient is to be kept perfectly quiet until the next morning, when the bandage and lint are to be removed, the eye carefully fomented and cleansed with warm water, and the dressings replaced. On the second day, great attention must be paid that the ligatures keep the lid sufficiently raised; and, if any union has taken place by adhesion at the angles of the incisions, it must be broken through with the probe. On the third day, the plasters attaching the ligatures to the forehead will in general require to be exchanged. The ligatures themselves must be supported by straps of plaster placed vertically between them; the edges of the incisions should again be touched with the sulphas cupri, or separated by the probe. The great art of the cure now consists in causing the incisions to be filled up by granulations only, so that the eyelid may be lengthened as much as possible, and which can only be effected by a continuance of the means indicated. In a few days

* "To the forceps used by Beer and Langenbeck, Messrs. Everill and Mason have adapted the spring used by Gibson for his artificial pupil forceps, which causes them to secure the raised fold without pressure by the operator.

more, and especially by the continued elevation of the lid, the ligatures cut their way out, during which period the eyelid is gradually lowered; and, by the time the incisions have filled up, it will have resumed its natural situation, and the cure will be completed. There will, in general, be an indentation in the ciliary margin of the tarsus, where the incisions were made; but this is sometimes scarcely perceptible, and never detrimental. If the patient should have kept the lids closed at the commencement of the operation by the action of the orbicularis, the first incision may not have been made as close as might be desired to the angle of the lids; and in this case a hair or two at that part may not afterwards obtain quite its or their original direction, and cause some inconvenience; but this does not often happen, as these hairs are usually carried clear of the eye." (p. 31—35.)

The operation of the under eyelid is analogous to that on the upper, but less severe, as the parts are more simple: we have not room to describe it. These operations are illustrated by six cases.

A few pages are next devoted to a consideration of the *Relaxation of the Upper Lid;* the causes of which complaint being various, the remedy will, of course, depend upon the proper treatment of the disease of which this is generally a symptom. We may dismiss this subject by observing that, when this affection arises from palsy, the cure is very uncertain, and the prognosis, of course, unfavourable.

We now proceed to examine the next section, on the *Eversion of the Eyelids*, and which, for the sake of perspicuity, our author has divided into four distinct species, as follow:

1. "As depending on chronic inflammation, accompanied by contraction of the skin and of the integuments of the lid; but without any marked cicatrix.
2. "As depending on acute inflammation, or immediately following it, with relaxation or swelling of the conjunctiva.
3. "As depending on the contraction occasioned by a cicatrix, on the healing of a wound, on or in the immediate vicinity of the eyelid.
4. "On paralysis."

This disease is a minor inconvenience compared to the inversion of the eyelids, and is met with in every degree, from the mere dropping of the tears to that stage in which the cornea is opaque from the effect of chronic inflammation, and the conjunctiva is thickened and dried: that portion of it forming the fold between the eyeball and lower lid may be so swollen as to form a substance almost horny between them; at another time the whole conjunctiva will protrude, so as to hide the ball of the eye. We pass over an account of the various modes of remedying this deformity, practised from the time of Hippocrates to the publication of Bordenave's paper in the Memoirs of the French Academy. We regret, also, that we can only refer to

the work before us for an account of the methods of treating the first and second species of this complaint, as described by our author. With respect to the third species,—viz. that depending on the contraction occasioned by a cicatrix, or the healing of a wound in the immediate vicinity of the eyelid,—we find the following important remarks:

"In this species, the appearances and actual situation of parts differ materially from the other two, and are influenced by different circumstances. It is well known that the first step towards the cure of an ulcer or wound, is the drawing in of the surrounding parts, in a manner commensurate with the growth of the granulations which are to fill up the vacuity that has been made by the progress of the ulcer; and, by the time cicatrization has taken place, the cicatrix bears no proportion to the size of the original wound. But this process of contraction does not stop here; it continues after the ulcer has healed, especially in loose parts; and, in burns of the neck, it is capable of drawing down and fastening the chin to the breast. This diminution in the quantity of new-formed parts continues until there is little left to mark where the solution of continuity existed: but this little does not resemble the original structure; it is firmer, harder, more stringy, and somewhat resembling the nature of ligament. The cure has been effected at the expense of the surrounding parts, which, if loose, as in the neck or in the eyelid, may be drawn in to a very considerable extent. In consequence of a knowledge of this fact, our attention, in cases of burns in the neck, should be invariably directed to the position of the head, which must be kept backwards until long after the wound has healed, in order to counteract, as much and as mechanically as possible, this tendency to contraction, and to force nature to form more new skin or a larger cicatrix, which she is always very unwilling to do, and is often indeed incapable of doing. The same thing takes place on the eyelid; and, if an ulcer be allowed to heal quickly, eversion, in a greater or less degree, is an invariable consequence. In the first and second species, the operation of this cause is slight, and on the edge of the eyelid or cartilage; in the third it is greater, and on the whole external surface of the cartilage, which is turned downwards, whilst the eyeball is more exposed: the whole of the conjunctiva of the under lid is distinctly seen, and forms something resembling an inclined plane from its angle of reflection over the eyeball, outwards and downwards. The deformity is more striking. In the second and third species, the conjunctiva always forms more or less of a sulcus, or hollow, with the eyeball at the angle of reflection: in the third, this part is fully exposed, the conjunctiva is drawn downwards; the tears always flow over the cheek; the curvature of the tarsus is altered; the ligaments are more stretched, and the elongation of the eyelid becomes more apparent; the conjunctiva is sometimes fungous or granulated, and occasionally but little affected or altered, but in many instances it assumes a lippitudinous appearance; the cicatrix is hard, and, for the most part, firmly attached to the cheek-bone.

"It was for the cure of this species of the complaint that Bordenave,

whose memoir I have already noticed, recommended the double operation of the removal of the cicatrix and of the fold of the conjunctiva; and, although he did not succeed in effecting a perfect cure, still he so much relieved his patients as to render his method deserving of the greatest attention: it will, however, be observed, it was only returning in some measure to the practice of the ancients. That it was not sufficient, is attested by the subsequent observations of Scarpa and Beer, who declare this species, in severe cases, to be incurable." (p. 71—73.)

To effect a cure of this species of eversion, continues our author, it is necessary first to remove the cicatrix of the old wound, with the strong membranous threads which attach it to the bone beneath, and then to give such permanent support to the eyelid as will enable it to resist the contractile force of the granulations from the cicatrization of the wound below.

"The operation for the third species consists, first, in the removal of the adhesions which the cicatrix has formed to the cheek bone, with the whole or such part of the cicatrix as can be with propriety taken away; secondly, in the cutting out of an angular portion of the eyelid, near the external canthus; thirdly, in the removal of the diseased fold of the conjunctiva, (if there be any,) by a horizontal stroke of the scissors, assisted by the forceps; fourthly, in the application of two sutures, to bring the divided edges of the eyelid together,—one close to the margin of the lid, the other near the point of the angle below; these are to be drawn just so tight as to bring the parts in close apposition, when they are to be cut off close to the knots, and supported by slips of sticking-plaster; fifthly, in the dressing of the wound made by the removal of the adhesions to the bottom with very fine lint, and applying a bandage over the whole.

"The subsequent dressings require attention. The object intended by the sutures will almost always be effected by the third day, when the edges of the angular wound will be seen to adhere, and the sutures are really of no further service, whilst a retention of them in the part would lead to ulceration. They are therefore to be cut and the threads removed, which will allow the openings made for their reception to close. Strips of adhesive plaster should be applied in their place, and a small compress, to give additional support to the part. If the edges of the lid should not have perfectly united, a small notch will remain for a short time, but which will be gradually filled up. If the lower part or apex of the angular piece should not have been consolidated by adhesive inflammation, it will fill up by granulation, which may be assisted after a time, or any fungus repressed, by gentle touches of the argentum nitratum.

"The wound made by the removal of the cicatrix, or of the points of attachment to the cheek-bone, is to be kept open after the first dressing, by an ointment composed of equal parts of the ung. lytta and of the ung. resinæ flavæ, and it is not to be allowed to close until the granulations have reached the level of the surrounding parts,

During the process of cicatrization, the eyelid must be carefully supported by strips of sticking-plaster.

"Slight inflammations accompanied by pain may, although in general they do not, take place: in such cases, the compress and bandage placed over the eye to complete the dressing ought to be kept wet with cold water, and a cathartic should always be administered on the morning subsequent to the operation. Poultices should be avoided, particularly in the third species, as they tend to promote suppuration and prevent adhesion." (p. 77—78.)

Of the fourth species we need not say much, as the treatment must be directed to the cure of the general disease; and, in truth, but little can be expected in such cases. We quote the following case in illustration of the operation proposed for the cure of the third species:

"John Smith, 22d Foot, admitted, labouring under complete eversion of the lower lid of the left eye, occasioned by an extensive wound he received fourteen years ago, by the wheel of a cart passing over the side of his head, and fracturing the frontal bone and the external margin of the orbit. The edge of the everted tarsus adheres to the malar bone by a firm cicatrix, and the muscles of the cheek exercise great power in drawing it downwards whenever the lower jaw moves. He has been in this state fourteen years, and suffers much inconvenience from it.

"23d. The operation for ectropium performed by making a free horizontal incision beneath the whole ciliary margin of the lid, and thus detaching it from its first adhesion to the malar bone; after which a triangular piece was cut out of the centre of the tarsus, and the lips of the wound brought together by two sutures. The lid was then retained in its natural position by adhesive straps and a bandage.

"25th. The dressings removed this morning; the granulations of the horizontal wound healthy; has experienced no pain since the operation.

"27th. The wound of the tarsus perfectly healed; the sutures removed; granulations spring up rather too abundantly from the horizontal incision beneath the orbit, and were therefore touched with the sulphate of copper.

"March 6th. The wound nearly healed.

"10th. Discharged; the lid perfectly restored to its natural position." (p. 81.)

We shall pass over a few pages devoted to the consideration of *wounds of the eyelids*, and of various small tumours to which they are liable; all of them distinguished by a particular name, mostly of a very formidable length, and of Grecian contour, the frequent occurrence of which we cannot but lament, as tending sadly to obscure a subject sufficiently difficult in itself: indeed, if the minute and almost imperceptible shades of difference in diseases of other parts of the body were equally disfigured or disguised by distinct names, the whole period of a

medical education would scarcely be sufficient to learn the mere language of the science. What shall we say to such words as the following*—*ptilosis*, *pachytes*, *pacheablepharosis*, and *pacheableophora?* the simple meaning of all which is, that the cilia have fallen out, and the edge of the eyelid is thickened.

On the *Encanthis*, or the enlargement of the caruncula lacrymalis, we need not dwell long: the disease, according to the testimony of Mr. Travers and our author, is not of very frequent occurrence in this country, and is for the most part the consequence of direct injury to the part, and of course affords the usual symptoms of inflammation, ending generally in the formation of a small abscess in the part, and from which (though rarely in this country, at least,) a fungus sometimes springs up. In the treatment of this affection, it is necessary to recollect that the inflammation often proceeds from the presence of a foreign body,—such as a loose eyelash sticking in the upper punctum, and irritating the caruncle. This must, of course, be removed; and the application of leeches to the part is very properly recommended, together with the fomentations of warm water. Our author condemns, and in our opinion with great reason, the use of cold applications, as advocated by the continental writers. If the fungous growth above mentioned should follow the formation of the abscess, the infusum sabinæ, or the metallic escharotics, are recommended for its removal. When the fringed-like excrescences, or fungous growths, are the consequences of inflammation which has not proceeded to suppuration, they should be cut off with the scissors, and the roots touched, in a day or two after, with the sulphate of copper. When the encanthus is not inflammatory, it may be removed by the knife or scissors: the only precaution necessary to be observed, is that the caruncle itself should be left entire, or, at most, as little of its substance removed as is possible.

We must be contented merely with saying that the *Pterygium* is next described, in both its varieties, and the mode of extirpating it related.

The next section is devoted to the consideration of the means of removing *Extraneous Substances from the Eye*, and of *Injuries of the Eyeball;* and the observations which Mr. Guthrie makes on these subjects are highly judicious and instructive; but we can do little more than recommend them to the attention of the student, and proceed to more important matter.

Of Tumours which are formed within the Orbit, and on Protrusion of the Eyeball.—These tumours, says our author, are almost always encysted, and are distinguished from the effects

* That they are indications of a miserable pedantry becoming too common in our science, already sufficiently difficult. Editor A. J. F. M.

of inflammation and abscess within the orbit, by the absence of any violent symptoms; and a case is given from RICHERAND to show the usual progress of such tumours. The best method of treating them, if deeply seated, appearing to be that of making a small opening into the tumour, and letting out its contents. Suppuration is induced by cutting off a portion of the sac, and introducing a piece of lint at the bottom of it. If the tumour be composed of a fatty substance, after the division of the conjunctiva over it, it may be laid hold of with a double hook, and dissected out, and which will be readily effected under such circumstance.

We lament extremely that the subsequent part of this section, upon the removal of tumours deeply seated within the orbit, and on the protrusion of the eyeball, are too long for insertion, and do not conveniently admit of being abridged.

The subject of *Cataract* is next considered: it occupies upwards of two hundred pages of closely printed letter-press, presenting a clear and luminous account of the opinions and practice both of the ancients and moderns, and entering minutely into the discussion of some of the nicer points which have produced much difference of opinion among the writers of our own country, as well as on the continent. It is obviously impossible for us to give any satisfactory analysis of this portion of our author's labours: we have, however, ventured to make a few extracts, *en passant*, from those parts which appear to us to possess most novelty, or to be of peculiar interest; and the effect of which can only be that of exciting the curiosity of our readers to examine the volume itself. We find nothing to notice particularly in the symptoms of cataract. On the subject of the diagnosis between that disease and incipient and confirmed amaurosis, we find the following remarks:

"The incipient amaurosis is occasionally accompanied by some of the symptoms attributed to muscæ volitantes; but one or more of the spots will in general be found to be fixed, of a darker colour, and permanent, whilst a general indistinctness of vision takes place and increases. This is, in other persons, only discoverable at first after a steady application of the eye to a particular object, when the sight is suddenly found to fail altogether, but returning again after resting the eye; or the patient describes himself to have suffered the loss of half of his sight, so as to be able to see only the half of an object; both of which states are, for the most part, accompanied by more or less pain in the forehead, temple, or eye. These changes are sometimes periodical. The sight is not improved by the use of spectacles, or by the application of the belladonna; seldom by viewing an object sideways, or to the right or left of the direct axis of vision, which it is in the early stages of cataract. Flashes of light, or white and brilliant circles, or luminous spots, equally indicate amaurosis; and the change in the colour of the flame of a candle from white to yellow, or red,

or green, is also demonstrative of that state; in which the patient occasionally sees, when the eye is closed during the night, luminous circles of different colours. The halo which is observed to surround the candle in cataract, of a white clouded colour, is in amaurosis of a bright yellow, or red, or green, the colours being more confused as the object is more distant. The cornea, in the incipient amaurosis, is scarcely altered from its natural state; but, at a later period of the disease, it evidently loses its perfect transparency and clearness, and becomes rather turbid or dull in appearance. The iris is at first sluggish in its movements, or the pupil has even begun to be dilated; at which period little or no change can be observed either in the lens or vitreous humour: but, as the disease advances, the pupil becomes more dilated, the edge of the iris loses its regularity, the pupil is no longer round, but irregular, or angular and fixed. In that form of amaurosis in which the actions of the iris and the motions of the pupil remain unaffected, no opacity is perceived behind the pupil which can be mistaken for cataract. The cloudiness which occurs in amaurosis is always distant from the iris, and is for the most part accompanied by a general change in the appearance of the lens and vitreous humour, which no longer seem to be of a perfectly jet black colour, but are changed so as to allow the bottom of the eye to be seen through them, of a pale greenish or horn colour, giving to the whole somewhat of the same hue. The cloudiness observed behind the pupil is deep-seated, and, on a careful examination in every direction, particularly sideways, may be observed to have a concave appearance, dependent on the form of the posterior part of the eye. If a particularly opaque spot can be observed, when the pupil is completely dilated, it will appear of a greenish or reddish-green colour, but not grey as in cataract; and, by changing the position of the eye, it will be found to change its place also, being caused by the refraction of light, and not by any permanent opacity. The eye will frequently be softer than natural, in which case the motions of the iris may be tremulous; the vitreous humour will then be thinner than usual, or even be dissolved." (p. 212, 213.)

In distinguishing cataract from that alteration of the vitreous humour, accompanied with an alteration in the structure of the hyaloid membrane, of the retina, and tunica choroidea, which is termed *glaucoma*, the following differences are usually observable. In this latter affection, the lens is not implicated, at least for a very considerable time.

"When the disease is fully formed, so as to be confounded with cataract, or to render a diagnosis necessary in order to prevent a useless and dangerous operation, the symptoms are as follow:—The eye has a general unhealthy appearance, arising from a turbid state of the cornea, which has lost its brilliancy, although in no one part has it become opaque. The sclerotica does not preserve its natural appearance, being either more of a bluish or yellowish colour, whilst several tortuous dark-red vessels may be observed, especially on the under and upper part of the eye, which do not run on to the cornea, but

penetrate the sclerotica at a distance not exceeding the eighth of an inch from it, and sometimes less, giving rise, when they are numerous, to the appearance of a white ring or circle situated between them and the cornea. They are varicose vessels, coming from within the eye, and intimately connected with varicosity of the vessels of the choroid coat; and, as that state of disease increases, they assume a darker red or blue colour, become larger and more tortuous, often communicating with each other where they penetrate the cornea, forming also a sort of vascular ring, exterior to the bluish-white one already noticed. If the eye is examined by the touch, it will be found rather firmer or harder than natural.

"The iris, if only one eye is affected, differs a little from its natural colour: if formerly blue, it has now become grey; a black iris changes to a dirty brown; but this alteration is of no consequence compared with the state of the pupil, which is dilated, unless inflammation of the iris, which is not an essential characteristic of the disease, has been superadded to it. The dilatation of the pupil is always accompanied by a marked irregularity of its edge, sometimes rendering it angular; whilst it is always perfectly fixed or immoveable, and occasionally drawn to one side, sometimes to both, rendering the pupil oval. The patient cannot distinguish light from darkness. (p. 214, 215.)

Respecting the causes of cataract, our author gives us only the usual explanation; and he then presents us with a classification of cataracts, which he has adopted in order to simplify the consideration of their diagnosis: he accordingly divides them into two classes, the true and the false. The first class has three genera: the first is the lenticular cataract; the second, the capsular cataract; and the third, the capsulo-lenticular. The second class, or the false cataracts, contain all those which are combined or connected with derangement of the iris or adjacent parts, as a consequence resulting from inflammation (p 227): each of these combinations is described, but we have not room for the discussion; nor can we promise to our readers any advantage from the insertion of any farther extracts that we might be enabled to make from the remaining portion of this work.

The chapter on the *Formation of Artificial Pupil* is alone of a length and intricacy to defy compression within any moderate compass, so that our readers should derive either pleasure or profit from our labours. We can only add, that those to whom this subject is interesting, including, we believe and hope, the whole rising generation of surgeons, will find ample details respecting all the disputed points,—all the advantages, real or supposed, of the plans that have been proposed or modified by so many different writers; and we moreover think that they are discussed with a spirit of impartiality and candour, very much to Mr. Guthrie's credit. That gentleman will, no doubt, excuse our hasty and meagre notice of his book, because the impossi-

bility of our going through it seriatim, without extending this article through three or more numbers, will be apparent to him; and we therefore take our leave of this work, by again recommending it to the perusal of the profession.

The plates which accompany this volume are in general well executed; but there is one error which it is incumbent upon us to advert to, because it is of a nature to raise a doubt as to the authenticity of the engraving, and should be corrected or explained in a subsequent edition. It is in the 6th and 7th figures of Plate III.; the first representing a strongly marked case of glaucoma, the lens being scarcely affected; the second (fig. 7,) is said to be *the other eye of the same person*, in which the lens is of a mahogany colour, &c.—whereas, unfortunately, *both the above are left eyes.*

Cases.

Successful Case of Amputation at the Hip-Joint. By James Syme, Member of the Royal College of Surgeons of London and Edinburgh, and Lecturer on Anatomy in Edinburgh.

(From the Edinburgh Medical and Surgical Journal for January, 1824.)

It was in the summer of the year 1821, about the month of August, to the best of my recollection, that I first saw William Fraser, the subject of the following case.

He was then nearly seventeen years of age, though apparently much younger—being of a thin pale habit and countenance, without any the least symptom of puberty.

His complaint was a painful swelling of the left thigh, extending from the condyles to within a few inches of the trochanters. The skin was tense, smooth, and of a nearly natural colour; but the consistence of the limb itself was exceedingly hard and unyielding—so much so indeed, that it felt as if entirely composed of bone.

A little above the knee, on the outer side of the thigh, there was an opening discharging thin fetid sanies, which led to a deep winding sinus, that allowed the probe to pass inwards and backwards as far as the bone, which was found to be exposed and rough on its surface, a little above the ham, between the external and internal flexors of the leg.

I was told that the swelling had existed for several weeks, and that, at its commencement, the patient had complained of most excruciating pain, which had gradually become less violent, though it still continued so troublesome as to require frequent use of laudanum. The opening abovementioned, had

been made recently by a surgeon, for the purpose of evacuating the contents of a very painful abscess.

No exciting cause of disease could be fixed upon, unless perhaps over-exertions at work (turning a wheel with the foot) or exposure to cold and wet.

Judging from all these circumstances concerning the actual state and history of the case, I felt satisfied as to the nature of the disease; and gave it, as my decided opinion, that the bone being extensively diseased, while the appearances of reaction were very inconsiderable, amputation would in all probability be necessary for the patient's relief;—at the same time recommending, that though the operation ought not to be delayed after his health began to sink, every means should be used in the mean time to uphold the vigour of the system, and enable it to cast off the disease. With this view he went to the country, but returned in a few weeks,—if not altered to the worse, certainly not the least improved.

His health appearing soon afterwards to yield considerably, the operation was recommended rather strongly, but without the effect of persuasion; indeed the father and mother, though sensible people and affectionate parents, would not press a measure, which seemed so frightful to the patient, that he declared his firm determination to die rather than submit to it.

Seeing him in this mind, I contented myself with calling now and then—twice in the month or so—merely for the satisfaction of the poor boy, and that of my own curiosity as to the termination of so severe a case of a disease (*Necrosis*), which, for some time past, has much interested my attention.

I continued these visits for a long while, and had much reason to admire the strength of constitution which withstood the destructive effects of a discharge so profuse and long continued —to say nothing of the constant uneasiness and occasional acute suffering caused by the disease. But, at last, finding that the state of matters continued altogether without change, the young man performing all his bodily functions in a healthy manner, and so as to bear up against his inveterate enemy without seeming to advance or retreat a single step for more than a year, I grew remiss in my attendance, and at last lost sight of poor Fraser entirely.

I had not seen or heard of him for many months, when, one day in the latter part of August last, his father stopped me in the street, and told me that his son had now made up his mind to the amputation. I called soon afterwards, and found the patient fully resolved on being delivered from a disease which had confined him to bed for more than two years, and was daily getting worse and worse. I therefore subjected the limb to a very careful examination.

A considerable change had taken place since the last occasion on which I saw it. The swelling was greater than ever, and now extended to within an inch of the trochanter major. A profuse glairy discharge was poured out from many openings on the posterior and outer sides of the limb, and abscesses were constantly forming farther and farther up towards the joint. When I saw him, there was one which had just opened near the tuberosity of the ischium, and another was beginning to point not far from the trochanter major.

His appearance was also altered for the worse, being still more emaciated; and though five feet eight inches in length, he still retained the character of a boy.

His mother told me that she now observed a daily diminution of strength—that every evening he was very feverish, and that he got little or no sleep, owing to pain of the limb. The pulse, as it had been all along, was small and very rapid.

Notwithstanding all these unfavourable circumstances, I still considered the operation advisable, since the lad's destruction was otherwise inevitable; and this means afforded him a chance, which was rendered better by his own good spirit and thorough determination to live. His digestive functions continued tolerably healthy; and Dr. Abercrombie, who had the goodness to visit the patient, in whom he took an interest, gave me still farther encouragement by coinciding as to the propriety of operating.

The next question was, At what part of the limb should amputation be performed?

In the earlier periods of the disease, nothing forbade removal below the trochanters; but now the case was very different.

I have said that the swelling could be traced distinctly to within an inch of the trochanter major, consequently it must reach the trochanter minor;—and every anatomist knows, that if the bone were cut higher than this latter process, the capsular ligament must be opened. Besides, granting that it was possible, by sawing obliquely through the spongy tissue which constitutes the bone between the trochanters, to remove all the sensibly swelled part without injuring the joint, still, considering the duration and spreading disposition of the disease, it was not probable,—I should rather say it was not possible,—that any portion of the bone could be sound or disposed for healthy action; and even if this difficulty could be got over, there would still remain another of equal magnitude—I mean the formation of sufficient flaps.

Plenty of skin might be got; but it was not likely that the thin, exhausted and distended muscles of the thigh would show much inclination for union, even if they could be secured in

sufficient quantity to cover the bone;—and this the most hasty examination was sufficient to prove altogether out of the question.

Amputation at the hip-joint then appeared to me the only justifiable operation—an opinion with which my friend Mr. Liston entirely agreed.

I knew very well that this operation had rarely or never succeeded in private practice; but that was no reason why it should not do so.* In the operation itself, I could see nothing to forbid recovery. Indeed, so far from regarding the acetabulum as any great obstacle to union, I considered the presence of a healthy cartilaginous surface as a much less evil than that of a great bone lacerated by the saw.

In determining as to the plan of operation, I had no hesitation in fixing upon the method of Lisfranc, since this was not only the speediest manner of proceeding, but also one which I had frequently practised on the subject, not only in Paris, under the direction of Lisfranc himself, but also at home in my own dissecting room.

On the 2d of September, assisted by my much esteemed and highly respected friend and instructor Mr. Liston, and in the presence of Dr. Abercrombie, Dr. Anderson of Leith, Dr. Scott, and Mr. Marshall, Surgeon to the Forces, I performed the operation in the manner following.

Having, with some difficulty, placed the patient upon a table so that the affected limb was perfectly free, and ascertained that Mr. Liston was ready to make pressure when and where required, I introduced a narrow knife, about a foot long in the blade, which was sharp on one edge only, at the proper place for transfixing the limb; but being prevented by the bent position in which, owing to long habit, the patient obstinately retained it from passing onwards in the direction of the tuberosity of the ischium by the neck of the femur, I lost no time in the repetition of fruitless attempts, but instantly changed my plan.

Without removing the point of the knife, I brought down its edge obliquely, and, by a sawing motion, quickly cut back, in a semicircular direction, to the tuberosity of the ischium, up along the femur, and round the trochanter major, so as to form very speedily identically the same flap which would have resulted from the plan I meant to have followed.

While Mr. Liston covered the numerous cut arteries with

* When Mr. Liston, two years ago, tied the subclavian artery with success for the first time in Great Britain, that operation was looked upon as desperate as amputation at the hip-joint is now. But since then, instances of its success have become quite common in the records of surgery—Mr. Todd of Dublin, Mr. Bullen of Lynn, and Mr. Wishart of Edinburgh, having all met with fortunate cases.

his left hand, and compressed the femoral in the groin by means of his right, I gathered together all the mass of undivided parts on the inner side of the thigh with my left hand, and then insulated the neck of the bone by passing the knife close past its lower surface. I now cut close down along the bone for some way below the trochanter minor, and lastly made my way outwards obliquely, so as to form a good internal flap.

Mr. Liston holding aside the flaps, I made a single cut with my long knife upon the head of the bone, which started with a loud report from its socket as soon as abduction was performed. Finally, I passed the knife round the head of the bone, cut the triangular and remaining portion of capsular ligament; and thus completed the operation, which certainly did not occupy, *at the most*, more than a minute.

I then proceeded, without delay, to take up the arteries, which were tied by our very promising pupil Mr. Thomas Evans.

As soon as the femoral, which had been completely commanded by pressure in the groin, was secured, Mr. Liston relaxed his hands in order that we might form some estimate as to the size and number of bleeding vessels; and then, had it not been for thorough seasoning in scenes of dreadful hemorrhage, I certainly should have been startled, prepared as I was to expect unusual vascularity, owing to the extensive action so long carried on in the limb.

It seemed indeed, at first sight, as if the vessels which supplied so many large and crossing jets of arterial blood could never all be closed. It may be imagined that we did not spend much time in admiring this alarming spectacle. A single instant was sufficient to convince us, that the patient's safety required all our expedition; and, in the course of a few minutes, hemorrhage was effectually restrained by the application of ten or twelve ligatures.

The flaps were now brought together, and retained in contact by means of five or six stitches. Some dry caddis was laid over the wound; and, lastly, I applied a single-headed roller obliquely round the body and stump, moderately tight, so as to afford proper support to the flaps; and then we lifted into bed the patient, who was wonderfully little exhausted.

The operation was performed at twelve o'clock; and, during the remainder of the day, nothing occurred of much interest except occasional vomiting, which I thought, at the time, might be attributed to the effects of an opiate given about two o'clock, on account of pain and restlessness.

In the evening, owing, as it seemed, to the exertion of vomiting, some bleeding appeared, but soon ceased. Not long afterwards, however, the patient complained so much of pain

and tightness in the stump, that I was induced to cut the bandage, and remove two of the stitches. This allowed some clotted blood to escape, and gave great relief. The wound was then dressed as before.

I heard no more of the patient that night, as I went to bed early on account of indisposition, under which I had been labouring for several days; but Mr. Liston saw him at twelve. He was then very low, his foot being cold, and his pulse hardly perceptible. He gradually recovered, however, under the use of moderate stimulants; and next morning, his state, as far as regarded strength, was better than it had been since the operation. The vomiting still continued, and, I was told by the young gentlemen who sat up, it had been, through the night, very frequent and distressing, hardly leaving him at rest for more than a quarter of an hour. I contented myself with directing that he should take some well seasoned beef-tea, often and in small quantities.

In the forenoon, finding that the stomach still continued so extremely irritable as to reject instantly whatever was introduced into it, I prescribed an injection, with forty drops of laudanum.

Dr. Abercrombie had the kindness to visit the patient, soon afterwards, at my request, and recommended persistence in the use of opiates, both solid and fluid. The good effects of this practice were soon manifest, the vomiting gradually subsiding, and the stomach beginning to retain beef-tea, and other fluids given in small quantity. The injection was repeated in the evening, and a grain of solid opium continued to be given by the mouth every three or four hours.

Next day, that is, the second after the operation, there was a decided improvement in all respects, the patient having slept well, and being almost free from vomiting. But a new, distressing, and, at first sight, alarming symptom, soon began to make its appearance in the form of a most violent hiccup. I was told, however, that he had been subject to this complaint before the operation, and therefore felt less uneasy on its account. In fact, it went away, by degrees, under the use of solid opium and peppermint lozenges, though attempts at returning were manifested for many days.

On the third day the wound was examined, when it looked perfectly well. Some clots of blood came away with the dressings, and others presented themselves at the gap which was caused by removing the two stitches. These were not disturbed then; but, having become gradually detached, were thrown out at the succeeding dressings, with a quantity of thin serous discharge. Some slips of adhesive plaster were applied, where necessary, for retaining the edges of the wound in proximity;

and the dressing in other respects continued to be of the lightest description.

The discharge, which was at first thin and watery, gradually became thick and more healthy. The opium was dispensed with after the first week. The bowels were brought into a good state by the occasional use of turpentine injections; and the patient's appetite, sleep and pulse, continued to improve. In short, every thing went on well.

About the 12th day, the ligatures began to separate, and, by the third week, they were all withdrawn.

Though the wound always retained a healthy and healing appearance, the patient suffered much from occasional returns of irritability in the intestinal canal, marked by diarrhœa and vomiting, which, it may be believed, tended greatly to protract recovery, and required assiduous medical attention. How much I am indebted to Dr. Abercrombie for his kind advice and assistance on these occasions, as well as benevolent attention to the poor lad in other respects, it is impossible for me to express; and can be properly understood by those only who have been placed in circumstances of equal responsibility.

About a month after the operation, the wound being nearly healed, I was flattering myself with the prospect of soon seeing Fraser restored to health and strength, when, to my great regret and disappointment, symptoms of ascites made their appearance, and, notwithstanding all our endeavours to the contrary, by means of gentle diuretics, such as supertartrate of potass, and nitrous ether, which were all that his weak state could bear, continued to increase, and at last carried him off at the commencement of the eighth week from the operation.

Dr. Abercrombie examined the body along with me. We found, in the cavity of the abdomen, a quantity of water sufficient to fill a large wash-hand basin. The liver was more than twice its usual size, very hard, yellow, and completely altered in its structure, there being no appearance of acini. The gall-bladder contained a quantity of fluid, more resembling serum than bile. The spleen was double the natural bulk, but sound and healthy.

The intestines were exceedingly thin, and looked as if destitute of a muscular coat. The lungs, heart, and all the other viscera, were, to appearance, perfectly sound.

In concluding the history of this case, I may be allowed to make the following remarks.

Amputation at the hip-joint is discountenanced by most surgeons, on the following grounds:

1. It is too great a shock for human strength to support.

2. The hemorrhage which must attend so great an operation, where no tourniquet can be applied, will render the pa-

tient's recovery, should he even get over the immediate shock, very tedious, if possible.

3. The confusion which must be occasioned in the circulation, by removing instantly so great a portion of the body, cannot but produce some immediate fatal disorder and congestion.

4. The extent of cartilage and synovial apparatus must prove an almost insuperable obstacle to union.

5. The mutilation inflicted renders life miserable, and not desirable.

6. The operation is never necessary.

In answer to the four first of these objections, I appeal to the case of William Fraser.

1. He was weak and emaciated to an extraordinary degree, yet he stood the shock well.

2. Notwithstanding the extreme vascularity of the limb, the hemorrhage did not exceed a few ounces.

3. Though the limb removed, owing to its having so long engrossed the attention of the system, may be regarded as equivalent to *half* of the body, no immediate disorder occurred in the circulation.

4. The wound healed kindly and soundly over the acetabulum.

If the 5th objection be good, then no surgeon need ever remove the thigh at any point in its upper third; for it is clear, that, unless this portion be left entire, no use can be made of the joint, and the patient must support the side of his body on a crutch, just as those people do who have a small and distorted limb. Indeed, I have often thought that these useless, dangling, inconvenient, unseemly appendages, would be much better off than on.

Lastly. As to the operation being never necessary, I shall only observe, that I myself have seen one other case in which it would have been most justly warranted. I allude to a compound-comminuted fracture of the thigh between the trochanters. The patient lived a month, and afforded two most favourable opportunities of performing the operation, viz. before the fatal suppuration was established, and after the system was in some measure reconciled to it. I have also heard of several met with by my friends; and as to Fraser's case, all who have seen the bone—and they are not few, or little entitled to respect—agree as to the necessity which there was for its *entire* removal. It is indeed thickened higher up than the trochanter minor, and evidently diseased throughout the neck.

I am no advocate for operations, whose only interest is their danger,—and assuredly regard the knife at all times as a great, though too often necessary evil; yet I feel no hesitation in recommending, to the serious attention of operating surgeons,

amputation at the hip-joint, although it be the greatest and bloodiest operation in surgery; for I am quite sure that there is sometimes no other mode of prolonging existence. And I firmly believe, that, if the operation be done properly, and above all quickly, its success will be general, if not uniform.

A Case where the Taliacotian Operation was successfully performed. By JOHN DAVIES, Esq. Member of the Royal College of Surgeons, &c.

(From the London Medical Repository for January, 1824.)

Shepherd Capon, about forty years of age, lost his nose three years ago from syphilis, with which he had been affected, according to his own account, for between two and three years. He has now been well of that disease for nearly three years. He is a shoemaker by trade; and in consequence of his being obliged to keep a handkerchief tied round his face and mouth to hide the deformity of his countenance, his sight was obstructed, and he was, in a great degree, prevented from attending to his work. The cartilage of the nose was entirely gone, and a great part of the nasal bones. The disease had destroyed the upper lip also, and produced a cleft, or rather a chasm in it, extending downwards from the nostrils, excepting that the two sides of the cleft were held together by a very thin bond of union, about a quarter of an inch in length. The cleft below this was triangular, extending, with a wide base, nearly over the whole edge of the lip. Above this commissure, the nostrils, &c. were all open. The upper maxillary bone was entirely destroyed between the two canine teeth, which allowed the remaining portion of the upper lip to sink down for want of support. The edges of the nostrils and all the surrounding skin were in a scarry state, and appeared to possess but little life. The man was in a very good state of health, and had just come from the country.

At his earnest request, I undertook to operate upon him for a new nose on September 19th, 1823, at the St. Pancras Infirmary, in the presence of Dr. Roots, Mr. Barrack, of Gower street, and several other medical gentlemen. Although it was apparently a very unfavourable case, yet I trusted a great deal to the good state of the patient's health.

The first object was to fill up the deficiency in the upper lip. There were two ways of accomplishing this: first, by performing the hare-lip operation; second, by bringing down a portion of integuments to cover the deficiency.

There appeared three objections to the hare-lip operation: first, the lip was in such a scarry state as to render it very probable

that an union would not take place between the two sides; second, even if an union did take place, there would be still a triangular opening in the edge of the upper lip, only a little less than before, owing to the extent to which it had been diseased; third, the irritation arising from the subsequent operation for the nose, which could not have been performed for several weeks, would probably have produced an absorption of the uniting medium. The latter mode was therefore adopted, and I proceeded to perform it in the following way:—

In the first place, the edges of the opening formed in the lip, above the small commissure which united its two halves, were pared all round, and the surface of the cartilaginous substance forming the anterior part of the floor of the nostrils was scraped with the point of the scalpel. A piece of integuments, large enough to cover the opening, was then dissected out from the side of the face, close to where the root of the original nose had been, leaving a small peduncle for the vessels to enter into it. This piece was twisted down to cover the deficiency of the lip, and a stitch put in it in order to retain it in its situation. An incision was then made on each side of the root of the original nose, and the integuments dissected forward on each side, and turned inside out, that their edges might meet in the middle, in which were put a stitch, in order that they might support the tip of the future nose; and also with a view of giving the skin, which was now, of course, internal, a chance of extending forward to meet that covering the outside of the future nose. Having done this, the form of the future nose, cut out in a piece of adhesive plaster, was stuck on the forehead; and the portion covered by this piece was dissected down as low as the root of the old nose, where a small peduncle was left to the flap, in which a twist was formed, in order to bring the surface of the skin outward. The flap was then brought down over the nostrils, and three stitches were put on each side to retain it in its proper situation. It was next plugged up with lint, and made into the form of a nose by thick compresses laid longitudinally on each side, and a roller was placed round the head to retain them. The forehead was dressed with adhesive plaster. It was found necessary to tie two small vessels during the operation. The man, who was now very cold, was put to bed, and a little wine and water given him.

The operation was performed between twelve and one o'clock in the day, and in the evening the new nose felt warm to the touch. The man felt pretty comfortable. He was ordered small doses of sulphate of magnesia to keep his bowels open, and his diet to consist of nothing but slops.

The dressings were removed on the third day, and both sides were found united from top to bottom. The wound on the

forehead appeared healthy, and was beginning to granulate. The portion of integument which was brought down to cover the deficiency of the lip was united, and the new nose had acquired a tolerably good shape; in a word, the appearance of the parts was altogether very favourable. A little bleeding took place from the inner surface of the new nose, in endeavouring to remove the plug, but it did not amount to a couple of drams. The plug was allowed to remain till the following day, when it was loosened by suppuration. He was dressed daily, and the nostrils were kept well plugged up with lint. The stitches were removed on the sixth day, when the union was complete. He began to walk out in twelve days after the operation, and he left town precisely at the end of three weeks from the time at which he was operated on. His nose at this time was perfectly healed, retaining a good form, and the wound on the forehead was reduced to the size of a half-crown piece. Being laughed at, and probably nicknamed by his neighbours in the country, in consequence of having a new nose, he is now come to live in town. The wound on the forehead is completely cicatrized; the nose retains its former shape; and his countenance, considering what a ravage the disease had made of it, appears manly. For want of plugging the nostrils properly when he was out of town, one is closed up, but the other is large enough for the transmission of air.*

Case of Encysted Tumour in the Abdomen. By GEORGE GREGORY, M. D. Senior Physician of the St. George's and St. James's General Dispensary.

(From the London Medical and Physical Journal for Dec. 1823.)

Sarah Court, thirty-six years of age, a widow, of spare habit of body, became a patient at the St. George's and St. James's Dispensary, on the 3d October, 1823. On her admission, she

* We are much indebted to Mr. Davies for having seen the patient since the operation was performed, We were much surprised to find, notwithstanding the destruction of the whole original nose, even of its bones, the complete chasm which had existed in the upper lip, and the destruction also of the upper maxillary bone between the canine teeth, that he now presents a well-shaped nose, and no deformity perceptible on a superficial view of his countenance. The cicatrices are much less observable than we supposed that they possibly could have been. He expresses himself uncommonly gratified at the alteration produced in his appearance by the operation, and still more so at the much greater comfort he has experienced since its performance. Indeed, with the exception of the deficiency in the upper maxillary bone, he now betrays no defect, nor does he experience any inconvenience from the grievous devastation which had been produced in the bones and soft parts of his face, and which had rendered this very ingenious and very ably-performed operation indispensably requisite to his comfort, as well as to his appearance.—EDITORS.

complained of considerable pain throughout the abdomen, constant, attended with frequent discharges of wind, and much weakness of the legs and thighs. Pulse quick; tongue foul; alvine evacuations regular; the catamenia had been absent for three years. Her present complaints were described as of four months' standing, and as becoming gradually worse. During the whole of this period, she had been subject to paroxysms of severe pain in the abdomen, recurring every three weeks, lasting for a few days, and relieved, for the most part, by a free discharge of flatus. On examination, the lower part of the abdomen appeared to be occupied by a firm swelling, which, though it gave no sense of fluctuation, was imagined to arise from some enlargement of the ovarium. The patient distinctly stated, that she could not refer its origin to either side in particular. She ascribed her complaints to extreme fatigue in her occupation as a washerwoman. Some warm aperients, that were directed, procured her some relief.

On the 14th October, I was requested to visit her at her own house. I found her suffering under an attack of severe pain of the abdomen, which was enlarged, tense, and very tender on pressure. She passed flatus in great abundance, but without any relief. She complained, also, of considerable difficulty of breathing, aggravated by the recumbent posture. Her tongue was loaded; the pulse quite imperceptible at the wrist; her bowels obstinately constipated. Cathartic medicines were freely administered, which procured several evacuations, and with them some slight relief. On the 16th, the symptoms recurred with great violence. The only position in which she could remain with any tolerable comfort, was kneeling by the side of the bed. Leeches were now applied to the abdomen, and fomentations renewed. Glysters, containing oil of turpentine, were thrown up; and to the medicines which she had previously taken were added the tincture of hyoscyamus, with very full doses of opium. By these means partial relief was obtained. On the evening of the 20th, the pulse having become more distinct, twelve ounces of blood were taken from the arm. The blood appeared cupped and buffy; but this measure procured for her only an hour or two of ease, while it materially diminished her general strength.

Fluctuation had been indistinctly perceived for some time, and, on the morning of the 21st, finding that all the plans of treatment hitherto devised had failed in obtaining for her any permanent benefit, I decided upon trying the chance of relief which the operation of tapping presented. Mr. Jeffreys introduced the trocar below the umbilicus, and about five pints of a transparent, brownish-coloured fluid were slowly drawn off. It was evident, during the operation, that some firm tumour was

continually preventing the escape of the water; and no doubt could be entertained that the trocar had only penetrated the peritoneum lining the abdominal parietes, and that we had evacuated only that sheet of water which lay between it and the tumour. The degree of relief afforded by the operation was transitory and trifling. The patient suffered greatly by flatus the succeeding night, and opium now afforded the only solace which her medical attendants could devise. She sank rapidly after this, and died late in the evening of the 29th October, after experiencing for more than a fortnight, and almost uninterruptedly, the most excruciating pain I had ever witnessed.

The body was opened the following day, sixteen hours after death, by Mr. Jeffreys, in presence of Dr. James Johnson, myself, and a number of gentlemen whose attention had been attracted by the singular violence and remarkable character of the symptoms.

On dividing the abdominal parietes, a large firm tumour, of a black colour, was brought into view, attached by slight, and probably recently effused, bands of coagulable lymph, to the peritoneum lining the abdominal muscles. These adhesions were less firm towards the posterior part, so that, after separating the tumour from the parietes of the abdomen, it readily *turned out*, as the yolk of an egg separates from the white. This tumour occupied nearly the whole of the abdominal cavity from the ensiform cartilage to the pelvis, and was every where of a very dark colour, almost black. When cut into, it was found to contain a large quantity of a thick, fetid, chocolate-coloured fluid. The walls of the cyst were of unequal thickness: in many parts they were not less than two inches thick. Its external surface was *every where smooth*, making allowance for a loose covering of coagulable lymph. The internal surface of the coats of the cyst was rough and irregular. Its texture was throughout soft, spongy, and *rotten;* and, by many gentlemen present, was compared to that of a putrid placenta. Its whole weight, including that of the contained fluid, may probably have somewhat exceeded twelve pounds.

The uterus and its appendages were now cut out, and carefully examined. Both ovaria were found in a perfectly healthy state; and the uterus itself was free from disease.

The tumour being removed, gave us an opportunity of seeing that the peritoneum covering the bowels, liver, and other viscera, was every where of the same dark colour as the surface of the cyst; and it was in all parts covered with the same shreds of coagulable lymph as were witnessed in the tumour. The intestines were loosely glued together, and their coats appeared preternaturally thickened. The liver internally was of an ash-colour, and unhealthy texture. The stomach was not more than usually distended.

The heart and lungs were free from all traces of disease.

The case which I have now detailed appears to suggest two very interesting subjects of inquiry. First, what was the *nature* of the tumour, and how was it nourished? second, what was the nature, and what the occasion, of that peculiar *blackening* of the peritoneum, and of the surface of the cyst, which attended the inflammation of these parts?

It will not have escaped the notice of the reader, that the external surface of the tumour was every where *smooth;* that no one point could be detected at which vessels ran into it, or at which it had formed any but recent, and easily torn, connections. This circumstance led to the notion that the cyst had been originally of the nature of an hydatid; the coats of which, in the course of time, had taken on a diseased action, and acquired that degree of density in which we observed them. This hint was thrown out by Dr. James Johnson, and it seems to me to offer a rational explanation of the appearances. How the cyst was nourished, I am wholly at a loss to understand.

2. The second question is at least equally difficult of solution. The blackened appearance of the peritoneum could not be mistaken for sphacelus, for the membrane was *firm*, and the tinge was too universally diffused to admit of such an explanation. It has been suggested that this peculiar appearance is associated in its general pathology with the production of those masses of black matter occasionally deposited in different structures, (particularly in cellular membranes,) to which the French have given the name of Melanosis. In this instance, however, the blackening was confined to the peritoneum, and to those parts occupied by inflammation; and, upon the whole, from my own observation, of a similar appearance in other bodies, (particularly as I have witnessed it at St. George's Hospital,) I am disposed to associate it with some peculiar kind of chronic inflammation. Whether this blackening inflammation derives its peculiarity from the degree of accompanying pain and tension,—or whether its source be to be sought in some more obscure state of the part affected,—are points on which I have speculated, but on which I am unable to come to any legitimate conclusion.

Case of Concussion of the Brain. By Geo. Shipman, Esq.

(From the London Medical and Physical Journal for Dec. 1823.)

A case of concussion of the brain has recently come under my immediate observation, presenting peculiarities which I believe are not generally observed in such injuries: a brief outline of it,

therefore, may not prove wholly useless to some of your readers.

The patient is a youth, about eighteen, (my apprentice) who, on Tuesday morning, the 7th instant, struck his head, on the middle of the anterior edge of the right parietal bone, against a brass nob, but did not wound the scalp. The pain at the time was considerable, but the accident, for some hours afterwards, would have been wholly disregarded, had not sickness and vomiting come on. About four, the same day, he complained of great pain and heat in the part, accompanied with pricking sensations beneath the bone; at nine, he became delirious, pupils contracted, with every other marked symptom of inflammation. About twenty ounces of blood were taken: pain considerably abated. A purging mixture, consisting of infusion of senna, salts, and manna, had been given at intervals of two hours, which had operated twice or thrice. At two the next morning delirium returned, and with it a high degree of nervous excitability; the hearing exceedingly acute. The head was shaved, and twenty leeches applied. Great relief was afforded, and he became again more sensible. Spirit of wine and æther was used as a local application. He continued, during the fore part of the day more tranquil; at five P. M., however, every symptom increased. He was bled to the extent of sixteen ounces: no abatement. The alimentary secretions had not been discharged for some hours: half a grain of calomel, with five of jalap, were given every two hours. Free evacuations were procured, and he was relieved.

On the following morning, however, (the 8th,) they ceased; he refused all medicine. About two P. M. he became blind, deaf, and unable to speak; but, with these symptoms, he was sensible: he rubbed his eyes, and appeared conscious of being blind; was hysterical, sometimes crying, and at others convulsed; made signs to write, and, on presenting him with pen and paper, he wrote down what he wished; then made signs for something to eat. On giving him bread and butter, he ate it voraciously, on which I previously put four grains of calomel. His bowels acted copiously about two hours afterwards, when he almost spontaneously recovered his sight, hearing, &c. From that total want of nervous susceptibility, there was a change to a state of excitement and acute sensibility to all impressions, accompanied with incoherent ideas and expressions, violently resisting every attempt to administer either medicine or food.

On the morning of the 9th, he again became blind, with the same train of symptoms as on the preceding day, but more convulsed. From twenty to thirty leeches were again applied, but no evident amendment. Injections were given, but did not produce satisfactory discharges. As on the former day, he made

signs for something to eat, when I again gave him calomel on bread and butter; which having operated two or three times, his speech returned, and he expressed himself as being better, and that he "could see." He continued occasionally convulsed through the day, accompanied with great anxiety and watchfulness. He did not refuse medicine, and discharges from the bowels were regularly kept up, when a progressive amendment was observable; and now (the 14th,) he is sitting up, complaining of little else than debility.

At the time he became blind, the pupils of the eyes were dilated, and unvaried by holding the candle near them. I was at a loss to conceive whether that state might be ascribed to effusion or extravasation: his appearance and actions bore closely on the former, but remaining sensible did away with such a conclusion. The instantaneous change, also, from a state of morbid sensibility of light and sound, to that of a total want of it, rendered it extremely improbable that organic changes were taking place. It was remarked that this state came on after a lapse of five or six hours of inaction of the bowels, and shortly after disappeared when copious secretions were procured. I am decidedly of opinion that, after the second bleeding, inflammation and other consequences of the injury, as respects the *brain*, were removed, and that the subsequent changes were produced by extensive disorder of the stomach, which such injuries are calculated to produce. During the whole of the period, acute pain was experienced upon the slightest pressure over the epigastric region, and the tenderness was observed to be increased during a state of paralyses of the optic and auditory nerves.

A Case wherein an Urinary Calculus was extracted through a Fistulous Opening in the Abdominal Parietes. By WILLIAM T. ILIFF, Esq. Surgeon, &c.

(From the London Medical Repository for January, 1824.)

Sarah Gutteridge, residing in Newington Causeway, aged about sixty, came under my care in August, 1822. She had experienced but little deviation from health, save a slight dull pain in the loins, until about eleven years ago, when, after receiving a blow, she experienced very considerable pain in the right inguinal region. This continued without intermission for six or seven weeks, when a small tumour was observed in that situation, to which were applied the usual means for promoting suppuration. Upon the breaking of the tumour, relief to some extent was obtained, and before the opening had closed,

she was discharged from the London Hospital, where, it appears, she had been for the four or five previous weeks.

Since her first attack this fistulous opening had occasionally closed, and when that occurred her sufferings became aggravated, and obliged her to seek relief, twice at St. Thomas's, and once at Guy's Hospital, at both of which hospitals she had been a patient for several weeks at a time.

My first visit to her was on the 11th of August, 1822, when I found her suffering excruciating pain at the fistulous opening, and in the course of the ureter of that side; and the knee (the right) was strongly contracted and drawn upwards when the pain was aggravated. She complained of no derangement of the stomach or bowels. The urine occasionally was turbid. Upon introducing a probe into the fistula, I found it strike against a solid body, which I naturally concluded to be the cause of the patient's suffering. A very trifling dilatation of the external opening allowed a bent probe to pass under the body felt in this situation, and a calculus, the halves of which are delineated in the annexed diagram, was thus extracted.

As the circumstance of a calculus, most evidently urinary in its form and character, being dislodged from this situation, is a very rare, and, I believe, an unprecedented occurrence, I was induced to obtain its chemical analysis. Dr. Copland undertook to transmit the calculus to Dr. Prout, whose authority cannot be too highly respected, and to whom I am indebted for the following particulars:—

"I found the calculus," Dr. Prout states, "to consist essentially of the oxalate of lime. My examination was first directed to the powder obtained by sawing it through, and which, of course, was furnished by all the concentric laminæ composing the calculus. This, on being repeatedly treated with the usual agents and with heat, gave no indication of the presence of lithic acid. When burnt, the residuum was found to consist almost entirely of lime, and faint traces only were perceptible of the earthy phosphates. A fragment subjected to the action of the blow-pipe exhibited the usual phenomena of the mulberry calculus. In short, there can be no doubt that its composition is as above stated, and that its origin is urinary."

To these proofs I may add, that the calculus had the irregular surface usually displayed by this kind of urinary calculi; and

at one corner it presented a pyramidal process much larger than the other eminences on its surface, which, perhaps, was moulded in the pelvis of the kidney before it passed from that situation. The weight of the calculus is thirty-three grains. The evidence just stated is conclusive of its origin: the situation in which it had been lodged, and the manner in which it caused the fistulous opening, are next deserving attention. But before I offer any remark on these points, I ought to state, that upon the breaking of the tumour, the fluid discharged partook of the urinous character, both in its smell, colour, and watery appearance; and the discharge still continues occasionally to present the same urinous character. My friend Mr. Callaway saw the patient with me three weeks since, and we found the fistula still open, and admitting a probe to the distance of about two inches. Since the extraction of the calculus her sufferings have been very greatly relieved, and she experiences only the inconvenience arising from the fistula. The painful contractions of the limb had also entirely left her.

I concluded, when the calculus was extracted, that it had been dislodged from the ureter at the time she received the blow noticed in the account of the case; and the whole history of her ailments up to the present time confirms that opinion. It is reasonable to suppose that the calculus had been formed in the pelvis of the kidney*—that it had afterwards descended some way into the ureter, where it was lodged at the time she received the blow, from which she dates the commencement of her sufferings, and that, owing to the blow, the calculus had ruptured the ureter, produced inflammation and abscess in the part surrounding it, which had extended and pointed outwards, according to the process usually observed by nature. The character of the discharge, and the state of the fistulous opening up to the present time, confirm this view of the case.†

* This opinion seems to be confirmed by the dull pain she experienced in the loins for several years before the tumour appeared in the inguinal region.

† Although several instances are on record, in which calculi have made their way externally from the pelvis of the kidneys, and been extracted from fistulæ in the loins, yet we know of none in which a calculus, decidedly of an urinary origin, has been removed from the situation; which renders this case so remarkable, and which, with the phenomena detailed in its history, clearly shows that the calculus, when descending in the ureter, and, perhaps, when it had reached the first contraction of this duct, where it passes over the psoæ muscles, had, either from the external violence alluded to in the relation of the case, or from the sudden contraction of the psoæ muscles in its vicinity, ruptured the ureter, as Mr. Iliff supposes, and made its way externally; or that the irregular and large size of the calculus had excited inflammation and suppuration, which had proceeded outwards, as usual, to the place where the fistula formed.—Editors.

Remarks on the Use of Prussic Acid in Affections of the Stomach and Heart. By R. MACLEOD, M. D. &c.

(From the London Medical and Physical Journal for December, 1823.)

In a communication made to this Journal about two years ago, I had occasion to allude to the good effects which appeared to me to arise from the use of prussic acid in certain kinds of dyspepsia. More extended observation has confirmed me in regarding this medicine as a remedy of considerable power in those forms of indigestion which are attended with much pain of the stomach and flatulence. It is extremely difficult to judge accurately of the powers of a medicine of this kind; and I would not, therefore, be understood as bestowing upon it unqualified praise, as universal in its application, or invariable in its effects. At the same time, I am inclined to think it merits a more extensive trial in this class of diseases, than, so far as I know, it has hitherto obtained.

One of the most distressing symptoms attending dyspepsia is uneasiness in the chest, with occasional fits of palpitation, sometimes assuming the more severe character of angina pectoris. On the other hand, in primary organic diseases of the heart, we very frequently find many of the most troublesome symptoms of dyspepsia, particularly flatulence; and such cases, although not altogether dependent on the state of the stomach, are nevertheless much aggravated by its derangement. Now, in such instances of morbid action of the heart brought on by dyspepsia, or of dyspepsia sympathetic of organic disease of the heart, I am inclined to think that much benefit is to be obtained from the employment of prussic acid. That, in the latter class of cases, it can for a moment retard the progress of organic mischief, I would by no means wish to imply, but, after a fair trial, I have been led to believe that it may palliate the sufferings of the patient, although it cannot cure the disease. In a case to which I alluded on a former occasion, the relief afforded was of the most unequivocal kind, although other remedies had failed to produce even temporary benefit. This patient died soon after, and the heart was found to be very considerably enlarged, and extremely soft.

A short time after the occurrence of this case, a patient applied to me, who laboured under well marked symptoms of enlargement of the heart, attended with considerable pain and palpitation of this organ. He was dyspeptic. I prescribed ten drops of prussic acid in a five-ounce mixture, of which he began by taking two table-spoonsful three times a-day, gradually increased till he took the whole of the mixture in twenty-four hours. After a few days the symptoms began to yield, and he

became much more comfortable. Having persevered in his medicine for about a fortnight, he discontinued his attendance, and I saw nothing of him for several months. The only perceptible effect from the medicine was the improvement in his general state of health, and diminution of the violence of the action of the heart: he was less subject to fits of palpitation, but I could not perceive that, in the intervals, the number of pulsations (averaging from seventy-five to eighty-five,) was diminished. After some months, this patient returned with symptoms analogous to those above described, and, without waiting to be examined, asked for *the medicine:* he took it a second time, with similar benefit. From this period, the intervals during which he was able to omit the use of the prussic acid gradually diminished in proportion as the organic derangement increased: notwithstanding this, however, it continued to afford relief until within a few weeks of his death, which did not take place for two years from the time of his falling under my notice. He had tried a variety of medicines, without obtaining any benefit, before he had recourse to the prussic acid; and, after this failed to afford relief, no other remedy was of the slightest avail. An opportunity presented itself of examining the body of this patient, who was under thirty-five at the time of his death: the only appearances worthy of note were great enlargement of the heart, with ossification of the mitral valves, and of those at the root of the aorta.

This is the second case in which I have seen prussic acid afford relief in derangement of the functions of the heart, which has been proved by dissection to have originated in organic disease. I have likewise given it in many cases of palpitation, and other unpleasant symptoms referred to the region of the heart, where these have appeared to depend on dyspepsia, and generally with considerable advantage. I am decidedly of opinion that it gives most relief where there is evidence of the disease in the chest, whether primary or secondary, being connected with faulty digestion: but I do not regard this as its only *modus operandi*, because I have not seen the same benefit derived when the dyspepsia has been as entirely removed by other means.

Different opinions may be entertained with respect to the evidence advanced in favour of this medicine, either here or elsewhere, and there is, of course, fair grounds for a certain degree of scepticism; but there is one point with regard to which I am convinced many are in error. I mean the degree of danger attending the use of prussic acid. I am in the habit of giving, as a general prescription, ten drops in five ounces, either of distilled or peppermint water, of which mixture adults (I do not use it for children,) begin with two table-spoonsful

three times a-day, gradually increased; and from this I have very seldom seen any inconvenience, and never any that was serious. The largest dose I have ever given is twenty-eight drops in twenty-four hours: Dr. Heller* mentions that he has pushed it to the extent of sixty drops of the *medicated*,—that is to say, about fifteen of the *pure*, prussic acid in a day.

Essay on Caries, and its Treatment. By Robert Liston, Fellow of the Royal Colleges of Surgeons, London and Edinburgh, Lecturer on Surgery, &c. &c.

(From the Edinburgh Medical and Surgical Journal for January, 1824.)

Amongst the many brilliant improvements which have been effected in this country in the cure of surgical affections, some diseases appear to have been comparatively overlooked and neglected. The disease known under the term *Caries* is one of these; and the active practice of our forefathers (by them employed indiscriminately enough), has not only been abandoned for one most inert, hurtful and unsatisfactory, but the symptoms and appearances, of themselves sufficiently distinctive, have been confounded in many works with those of diseases most widely different in every respect. As this Essay may probably be followed, at some future period, by notices of other diseases and injuries of the bones, it may be proper to premise a few remarks on the pathology of this part of the structure.

It is well known that bones grow and are nourished by the same means as other parts of the system, and are subject to the same laws. Together with the other white textures, they are less freely supplied with blood-vessels and nerves in proportion to the other parts, more especially after their growth is completed.

When incited action of the blood-vessels in their harder structures takes place, their sensibility is roused to an exquisite degree, and their healthy or perverted processes are carried on with great vigour and amazing rapidity. Solution of continuity in bones is repaired by the agglutinative process, or union by the first intention; or if, from the nature and circumstances of the injury, or the improper interference of art, Nature is in this thwarted, the breach will be repaired by granulation. The granulations will be found to shoot from the broken surfaces, the vessels of which become extremely active, and the callus or new bone is the result of their assimilation or consolidation. To the surrounding soft parts has been attributed a great share of the work in the union of broken bones; and when bones

* *Revue Medicale*, Aout.

have been fractured in circumstances not admitting of this assistance, the process of reparation, it is said, cannot be accomplished.

In dissecting a fractured limb which has been removed during the process of union by callus, it will be found that the new bone is uniformly attached to the sound part of the old, the vessels of the part employed in this process being much increased in size. The newly deposited bone, which in its turn carries on the process, being perforated by numerous and large foramina, for the entrance of corresponding ramifications of arteries, &c. The new formation will be perceived shooting from the opposed ends till these are united; and the masses in which they are deposited will be direct, and but slightly prominent, or, on the other hand, irregular and unshapely, according as the separated ends are favourably or unfavourably placed. I can conceive it possible, and in fact have frequently found, new bone connected with the soft parts; but this was the product of a splinter, which had still retained its vitality, and *whose vessels* had formed a contribution to the general action.

Great powers not only in the production, but also in the removal of bone, have been long allowed to the periosteum. No one, I will venture to say, has as yet detected this membrane in either of these acts. New bone has not been found adhering to the periosteum, either in fractures or necrosis, far less has a complete substitute, composed of the *ossified periosteum*, been ever discovered incasing a sequestrum. In every instance, the new formation is deposited in nodules adhering firmly to the old bone, and, as remarked above, freely perforated by nutritious arteries. The vessels of the bone no doubt are ramified on the external and internal periosteum; but it is only after their entrance into the perforations, that they become disposed to pour out ossific matter. In the healthy state of the system, the vessels of each part repair any breach by a substance nearly resembling itself. Skin is united to skin, muscle to muscle, and by substances somewhat similar. We might, therefore, with equal propriety and truth attribute the reparation of skin to the subjacent muscle, or, *vice versa*, as of bone to periosteum, or periosteum to bone.

From various causes, bones are liable to attacks of inflammation; and the terminations are, as in the soft and more sensible parts, in resolution, suppuration, or death. Effusion, by which the vessels so readily relieve themselves in softer textures, cannot take place here so easily, or to such an extent, as to prove beneficial; and it is with difficulty that such deep-seated actions can be controlled by the common remedies. The consequence is, that resolution is comparatively rare; whilst suppuration on the surface, or in the centre of the bones, and death,

partial or total, are the more frequent results of injury or incited vascular action, however induced. Suppuration in the substance of bones is necessarily attended with loss of substance; collections of matter, *external* to bones, if allowed to press long on their surface, or if firmly bound down by strong and unyielding sheaths, will, after a longer or shorter time, produce a breach of continuity in them, by causing absorption of their outer lamella, and the subjacent cancellated texture; the pressure of aneurismal or other tumours, have the same effect. Such losses of substance are, in general, speedily repaired, as I have stated above, so soon as the cause is removed, by the active effusion of new matter from the proper vessels of the bone. The impression, that part of a bone has been absorbed by the pressure of an aneurism, ought not to induce the surgeon to prefer the amputation of the limb to the ligature of the artery.* The bones composing the larger joints, even after great loss of substance, are frequently found firmly united by new bony matter; in other words, anchylosed—for instance, the femur and os innominatum, after the removal of the head and neck of the femur, and destruction of the cotyloid cavity, or the knee or elbow-joints, after long continued disease. Cases, however, are by no means uncommon, in which the loss of substance is of a most intractable nature, and frequently incurable.

Such affections of the bones, resembling specific incurable ulcers in the soft parts, may proceed either from the debility of the patient's constitution, or from the diminished vitality of the surrounding and affected parts, occasioned by long continued or violent action. Whatever the cause may be, whether constitutional or not, certain it is, that some ulcerations in bones heal kindly enough, whilst others, apparently in the same circumstances, have no such disposition. To such ulcers in bones as resist the natural efforts of the constitution towards their cure, and require the active interference of art, I would propose to limit the term CARIES.

Before taking notice of the circumstances and symptoms attendant on this affection, it may be remarked, that the comparative frequency of the one or other of the terminations of inflammation, suppuration and its consequences, or death, depends much on the kind of bone implicated. The flat bones, the shafts of the long bones, and the outer lamella of all bones,

* By the ligature of the femoral, which appears to me the more advisable as well as the less hazardous proceeding of the two in such circumstances, I have been so fortunate as to bring to a happy termination a case of popliteal aneurism, where there was every reason to believe that absorption of the bone, to a great extent, had taken place, and exceeding, by several inches, one I had seen amputated. The tumour and limb in the one I allude to, in which the femoral artery was tied, measured nearly two feet in circumference.

as possessing a more dense texture, containing a greater proportion of earthy matter, and being less freely supplied with blood-vessels and nerves, possess less power of resistance; and necrosis, or death of the affected part, is the common consequence of injury or of vascular action, increased beyond a certain point. Of this disease hereafter. That on which it is now my intention to make some remarks, takes place almost uniformly in the heads of long bones, or in the similar texture of short bones. They have greater powers of life; and their structure, being loose and spongy, effusion and abscess easily take place in them; or otherwise, their outer lamella, being very thin, readily yields to the pressure of matter from without, and admits it into their internal cells.

Though caries is the disease to which the soft and spongy bones are most liable, it does not follow that other diseases may not now and then occur in them. Affections sufficiently violent, and injuries sufficiently severe to occasion death, will sometimes happen to such textures. I have witnessed many examples in point; and the preparations illustrative of this fact are pretty numerous in our collection. One very remarkable is from a young man, Cameron, who was struck by a musket ball on the head of the tibia, at one of the engagements in the Peninsula. The wound never completely healed, though at some times the discharge almost dried up, and his health recruited a little. He applied to a public hospital for relief, and was there under treatment for a long time; that is to say, he was kept on low diet, and the wound poulticed. He had an attack of erysipelas, from which his worn-out constitution did not recover. On examination after death, a cloaca was found leading to a sequestrum in the head of the bone, of about an inch long, and half an inch thick, beautifully macerated in the purulent discharge. It resembles a piece of loaf sugar which has been dipped in hot water, and then dried. Considerable effusion of new bony matter had taken place on the fore-part of the bone, over the cavity containing the dead part, showing how willing Nature was to supply the deficiency. The two diseases of Caries and Necrosis are frequently complicated with one another in the same part; that is to say, the parietes surrounding the sequestrum may become indisposed to heal; and though the dead part be cast out by Nature, or removed by the surgeon, still a cure cannot be obtained without the active interference of art.

The case of a boy, Kennedy, æt. 15, illustrates this proposition in a remarkable manner. He was, without any assignable cause, attacked by violent pain in the upper part of the tibia, about four years before his application to me. An abscess formed and discharged. He was admitted into the Royal

Infirmary, when a sequestrum was removed. At the end of five weeks, he was dismissed, and again taken in for eight days, on account of the continuance of the discharge. On his application to me, it was found that the probe led to a considerable cavity in the bone. The opening was enlarged by the application of a large trephine; and after the removal of the diseased cancellated texture, by the scoup and gouge, the cautery was freely employed. In a few weeks, a firm and permanent cicatrization was brought about, and the boy remains free of disease.

It was formerly remarked, that where the action of the vessels is incited in bones, they become highly sensible. Hence, in the commencement of this disease, which is attended with more or less inflammatory action, the patient generally suffers most excruciating agony—so great in general as to prevent him, perhaps for weeks, from enjoying the least repose. The affected part is generally swollen considerably; but the enlargement is seldom so general or great as in the diseased state of the ligaments and other apparatus of a joint, generally known by the name of White Swelling. White swelling, however, may now and then be the precursor of caries; or, in other words, a disease commencing in the ligaments, bursæ, &c., occasioning great enlargement, may extend to the bone; and breach of continuity, terminating in unhealthy ulceration, may ultimately be the consequence. But when the bone is primarily affected, there is seldom much thickening of the surrounding parts; and the swelling occasioned by the effusion of new bone is, as might be anticipated, much more unyielding than that arising from thickened tendons, ligaments, &c.

In the disease in question the affected portion of bone would appear to be, at first, in a half dead state, neither possessing vitality enough to enable it, by an effort, to repair the breach, nor dead enough to be thrown off by the surrounding sound parts. When the parietes of the breach have remained a considerable time in this inactive state, the surrounding vessels become increased in activity, and the surface of the bone in the vicinity is studded with nodules of new bony matter. This is not in general limited to the affected bone, if one only is the seat of the disease, but frequently extends to those articulated with it. The soft parts are commonly more or less thickened, and rendered exceedingly dense, by the effusion of lymph into the cellular texture; and so great is the thickening in some cases, that the knife is resisted as by cartilage. Such a state of the parts, renders the securing of vessels, after operation upon them, a most difficult task. This I have experienced in several cases. When the bleeding is from small vessels, pressure is here more effectual perhaps, than in the natural state of the

parts; but bleeding from a large vessel is most obstinate and troublesome,—the vessel cannot retract, nor indeed can any of the immediate natural processes for the stoppage of hemorrhage take place. It is equally impossible for the surgeon to draw an artery out and tie it in such a state of parts; the only remaining plan of procedure is by the needle and ligature.

I was under the necessity of securing the anterior tibial in the case of the patient B——,* some days after the operation, in this way; and after the removal of the metacarpal bone of the great toe from a man of the name of Cross, great difficulty was experienced in arresting the hemorrhage;—the division of the bone was made with the cutting forceps. To expose the bleeding vessel completely, it became necessary, after all, to turn out the articulating head of the bone. Still it was impossible to pull out the bleeding extremity. The needle and ligature were had recourse to. Notwithstanding this, secondary bleeding to an alarming extent occurred, and was at last commanded by accurately applied pressure.

The discharge which proceeds from such a disease, and which is found to be poured through one or more openings, is frequently of the most fetid kind, and in great profusion—the skin is excoriated, and the probe blackened by its acrimonious and fetid properties. The surrounding bones being deprived so far of their nourishment, become so soft as to be easily perforated by a blunt instrument, or cut by a knife—and, possessing little earthy matter, when separated by maceration from the surrounding parts, they become exceedingly light.

The softening of the bones is frequently not limited to those in the vicinity, but pervades more or less the whole system, and indeed exists in many instances, independently of any active disease. This state depends on the nature of the constitution, and must be attended to accordingly. Carious ulceration is generally confined to one or two bones, at other times it involves a whole chain of them. It may be limited to a part of one bone only in a complicated joint, or may embrace the whole of it. This will depend on the severity and extent of the primary action, or on the length of time and violence with which pressure has been allowed to exist, whether from the nature of the superincumbent texture, or the carelessness (or whatever it may be called) of the surgeon.†

* This case is related fully in the subsequent part of the paper.

† The propriety of evacuating matter, when collected upon bones, in their vicinity, or in their substance, cannot be too much insisted upon. Many such collections arise from a primary affection of the bone, whilst others, commencing in the soft parts, will frequently find their way more deeply, owing to the unyielding nature of the superincumbent textures. In the first case, if left to itself, the disease slight, and perhaps limited to a very small portion of one bone, may destroy the whole of that, and attack those in its vicinity. Again, a collection

The destruction of the constitution attendant on this disease is at first very great,—the sympathetic fever is followed by a no less violent state of hectic, under which and the other attendant discharge, many patients sink. The general affection, of course, in some degree keeps pace with the local one in violence and duration. The irritation is in some cases so violent as to destroy the patient in a very few weeks or months; but cases will sometimes present themselves, in which a constitution, by no means strong, will be enabled to bear up for a long period of years under pretty extensive disease of a bone. By this it is not to be understood, that, during all this period, the patients suffered from hectic. The disease comes into a quiet state, and the exhausted constitution is allowed time to recruit, so as to meet any new attack of irritation and fever.

Such, in general, is the course of the disease; the giving way of the skin is attended with discharge more or less profuse, and with hectic fever more or less violent, according to circumstances. These, as noticed formerly, either destroy the patient, or after a time subside. The discharge will sometimes appear almost entirely to dry up, and some of the openings may even close, allowing the constitution to rally a little. The temporary cicatrices of sores leading to diseased bone, have a very different appearance indeed from the sound scar after their removal. The former is bluish, soft, and elevated above, and on a level with the neighbouring parts, and moveable over the bone; the latter are depressed, white, and firmly adherent to the bone.

The paroxysms of pain and inflammation in the diseased part occasion fresh attacks of constitutional derangement. This goes on till the patient's health and strength are exhausted, and he is then either destroyed entirely, or is relieved by the spontaneous or artificial removal of the offending part. A natural cure

not originally arising from disease in a bone, will now and then deprive a bone of its periosteum, and induce necrosis or exfoliation (degrees of the same affection), or may give rise to all the mischief in a joint as above described.

Equally, if not more dreadful effects arise from collections in the softer textures. Important cavities or canals are also apt to suffer from neglected abscesses in their vicinity. Some practitioners, however, are apt to look upon indolent tumours and abscesses as quite harmless, and advise that they be left to Nature.

In confirmation of what is stated above, I may merely allude to the case of a young girl who died from injury of the head. The existence of matter under the cranium, was clearly enough indicated by the general and local symptoms. The operation was however delayed. On dissection, the abscess was found to have made its way into the longitudinal sinus, and had filled the whole venous canals within the head.

I may also notice instances of matter confined in the neck, making its way into the mediastinum, trachea and œsophagus, several of which I have witnessed. The occurrence of disease in bones from this cause, must be sufficiently familiar to every one who has enjoyed even limited opportunities of observation.

can take place only by the complete death of the affected part, and its consequent separation from the system.* This may arise from an attack of inflammation greater than the worn-out parts are able to withstand; and if the whole disease is thus destroyed, it is immediately thrown off, and granulations speedily springing up from the surface repair the breach. We frequently find small pieces of bone lying loose in a carious cavity, and such are now and then discharged during the progress of the disease. These are in general separated by the rapid progress of ulceration; but the ejection of many such is not sufficient to make any favourable change in the disease. The whole unhealthy part *must become necrosed*, and be thrown out before the discharge, and consequent constitutional irritation, can be expected to subside. As Nature does so little in this disease, we have now to consider what prospect of relief our art holds out.

From what has been said above, it would appear, that to trust to Nature for a cure in this diseased process, is utterly fruitless and unprofitable; nor can the application of external remedies, as ointments, poultices &c. if they do no harm, be reasonably expected to do much good. We must therefore adopt some means of getting quit of the mischief, and that before it has undermined the constitution, and ruined the patient's health. The first, or inflammatory stage of the disease, and which, as has been remarked, is attended with the most excruciating pain, must be counteracted by the local abstraction of blood (though this remedy cannot with safety be carried to a great extent), followed by counter-irritants, issues, sinapisms, blisters, or ointment of the tartrate of antimony, used so as to bring out a copious eruption of pustules. These three last I would prefer in mild cases. From the employment of all of them, I have witnessed the most happy effects. The tartrate of antimony is perhaps to be preferred, as being quite manageable, so that as much or as little irritation as is desired may be produced without difficulty, and in a short time. I am in the habit of ordering it daily, and observing its operation both in affections of joints, and in fixed deep-seated pains, with the most marked and decided success. The most effectual remedy, however, and the

* A natural cure of caries, though very rare, is certainly not absolutely impossible. A bone, or part of a bone, affected by this disease, and to which alone the mischief is confined, may, from some circumstance, become necrosed and separated from the system. This occurrence, however, is so extremely rare, that the surgeon is not justified in encouraging the patient to hope it. The disease, when fairly established, will endure for a series of years, at one time becoming very active, and again subsiding into a quiet state. The patient's health, notwithstanding, gradually declines, and, in many instances, so much so as to preclude any attempt at saving the extremity in which the disease may be seated.

one from which most relief is to be derived, both immediately and permanently, is the application of the actual cautery, in the form of moxa, to the integuments over the diseased part, for the purpose of producing a pretty deep eschar. In all deep-seated pains of the joints, this remedy affords a most speedy and complete relief, at the expense of but a trifling pain of no long duration. The pain does not appear to be greater than that arising from the formation of an eschar by potass, or any other of the potential cauteries, and lasts only during the time of the application, whilst the violent pain does not subside perhaps for twelve hours after the employment of the potass. The pain of the moxa, I repeat, is only instantaneous; its beneficial effects are both speedy and lasting; the formation of an eschar by the potential cautery produces severe pain of long duration, and its use generally leads to disappointment.

In a disease of some standing, or in a large joint, the application of one moxa will prove insufficient; and it may become necessary to apply several around the pained part. If it is desirable that the eschar should be deep, they must be repeated in the same place. The good effect is generally experienced before the separation of the eschar; and, upon its falling off, the healing of the sore should be encouraged. I never could observe the slightest benefit from maintaining a discharge from an issue. However made, the patient feels no relief after the discharge is established; and, if profuse, it must be a mean of destroying his health. Instead of encouraging discharge, it will be found more advantageous to have recourse to fresh applications. During the adhesion of the eschar, the best application is a common poultice, which, on the separation of the dead part, may be exchanged for any simple ointment. The sores, following the use of the moxa, are generally very tedious in healing. This, perhaps, may be attributed to the vitality of the surrounding parts being, in a measure, diminished by the application.

In some instances of deep-seated pain in bones, I have applied the cautery with advantage, so as to produce an eschar: the moxa is, however, a preferable mode of effecting this purpose. The powerful effect of this remedy is well exemplified in the following, out of many similar cases.

A man named Flanigan applied to me on account of most violent pain in his back, and stretching down his thighs. He had suffered under the disease for months, and had been very little, if at all, relieved by blisters, sudorifics, and other local and general remedies, which had been judiciously put in practice. He stated his complaints to have arisen, soon after he had been invalided, in consequence of a severe injury received on the abdomen from falling on a stake. He had been a very ac-

tive, muscular man, but, from continual suffering, had become emaciated to an extraordinary degree. He mentioned, that, within a very short time, he had lost three or four stone in weight. The pains were so violent as to prevent him from ever lying down in bed; and he was generally obliged to sit up, with his knees drawn towards the abdomen. The pain was distinctly pointed out as originating at the top of the sacrum; but no change could be perceived externally, in the form of the parts. The moxa was applied over the part pointed out by the patient, as being the seat of the greatest suffering; and, in a very few days he returned, to report himself perfectly cured. Long before the separation of the eschar, he had resumed his employment—a very laborious one; and, with the exception of a slight threatening of a return of his former complaints, which occurred a few months afterwards, and which disappeared without further treatment, I have every reason to belive that the patient continues well.

I might relate many cases in which I have little doubt extensive disease in the joints was prevented by this application. When the disease which we have named Caries is fairly established, and the integuments have given way, the most rational, and, as we shall see, the most successful proceeding, is that pointed out by Nature. To accomplish our end, viz. the death of the bone, recourse must be had to different means, according to the particular circumstances of the case. We shall be the more inclined to make attempts to save even large joints, when we consider the small extent occupied by the disease in some annexed cases and plates, and the great efforts made by Nature: in many, she appears, in fact, to wait but for the separation of the sickly part, by accident or the interference of art. We shall be further encouraged by the success following the attempts in the cases to be related by and by.

We may divide the means to be employed into these in which the disease, or part of it, is immediately removed, and those which alter the circumstances, so that it shall be thrown off by the constitution. The first indication to be accomplished by the proper use of trephines, perforators, gouges, gravers, scoops, saws, and forceps of different kinds, for dividing or extracting; the second by cauteries, actual or potential. In general, a combination of both is required.

In caries of the long bones, it becomes in general necessary to enlarge the opening through the outer lamella, by the application of the trephine, and, perhaps, by the use of a small saw or cutting forceps, so as to connect the different perforations, and thus obtain access to the diseased cancelli. The scoop or graver will answer well for the rest of the work.

Here it is difficult to ascertain, amidst the blood effused,

what is sound and what diseased; and, in order to make sure, it is prudent in most instances to apply the actual cautery very freely to the exposed surface. This will by and by be thrown off, and granulations of a healthy kind fill up the breach. None of the potential cauteries are much to be trusted to; their application is equally if not more painful, and the continuance of the pain longer.

It is seldom, indeed, that any considerable exfoliation follows the use of the most active, whereas this is the inevitable consequence of the proper use of the hot iron. The application of the latter is terrible in appearance, but not in reality; and it has been almost entirely abandoned in this country—insomuch, indeed, that but very few surgeons have ever applied it, or seen it applied. The sooner it is reinstated in its former station among the surgical means of cure, the better, as, till then, many other diseases besides caries must baffle entirely every effort of the surgeon. Better that a patient should suffer a very little pain for a few seconds, than remain a miserable object for life (which, if the disease is extensive, will not be of long continuance), or submit to a mutilation. It will be absolutely necessary to keep the wound open, by proper dressings, until every part of the parietes granulate. The exfoliation will be accelerated, at all events the discharge, if offensive, in some measure corrected by the use of spirituous applications,—tinct. myrrh. opium, aloes, &c. or any of these combined. After the cavity becomes healthy, it would be proper to fill it very lightly with lint, so as to support the granulations.

The red precipitate of mercury, the nitrate of mercury (*eau mercurielle* of the old surgeons), lunar caustic or potass, may be had recourse to, if the potential cautery, for any reason, is preferred. The lunar caustic and red precipitate are more manageable than the *eau mercurielle*, or than any of the acids; but any of them will prove but of little use in comparison to the actual cautery. If the actual cautery is objected to, the surgeon is still bound to do all in his power towards the extirpation of the disease, seeing that Nature can with great difficulty bring it to a happy termination, unless when well assisted.

Some encouragement is held out by the first cases I operated upon, which, in the end, turned out well, though I am now convinced, that, had the actual cautery been employed, a cure would have been effected in much less than half the time, and with a great deal less suffering to the patients.

The operations on the short bones of the tarsus and carpus, are not to be undertaken but by those that are intimately acquainted with their articulations and connections, shape and size—the ligaments by which they are bound together—the direction of their surfaces—the exact point at which the tendons

cross or are inserted into them, and, lastly, the precise situation of the blood-vessels and nerves. In short, the person who operates in such cases should be an *anatomist*, otherwise the most fatal mistakes may arise.

When the disease is seated in one of the tarsal or carpal bones, and entirely limited to that one, its simple removal will be sufficient. If, however, more than one (or, in some instances, two) is affected, the operation becomes more complicated and difficult for the surgeon, and more painful for the patient. Supposing (as often happens) that one of the tarsal or carpal bones is completely destroyed, and that the surfaces of those articulated with it are also more or less affected, their cartilages and outer lamella being absorbed, it is, in such circumstances, not sufficient or safe merely to remove the loosely attached portions of the one primarily affected. The diseased surfaces or substance (if the disease extends deeply) of the surrounding ones must also be cut out, and the operation finished, for the same reasons as formerly given in speaking of caries of the long bones, by the free application of the cautery.

In caries of the distal range of bones, either in the carpus or tarsus, the ends of those supported by them are in general involved; and these, of course, must be treated after the same fashion. If one of them is diseased, with the head of the metacarpal or metatarsal bone connected with it,—and if the disease has not extended further, the removal will be sufficient, and can be easily accomplished.

In short, if the whole disease can be extirpated, leaving the surfaces of the surrounding bones covered by cartilage, the use of the cautery is not at all required, and would be productive of great harm, not to speak of the cruelty of the unnecessary application. But wherever it is impossible to avoid encroaching on the concellated texture of a bone (such as the os calcis), which it would be unsafe or imprudent to take away entirely, the use of the cautery is then indispensable. These rules of practice are fully illustrated in some of the annexed cases.

It has been often remarked, that, after the removal of the hectic cause—say a diseased limb or joint, by amputation—that the patient was immediately relieved of all complaints, and recovered rapidly. The same may be said of the extirpation of carious bones.

The symptoms disappear speedily, and the recovery is equally rapid and much more complete; insomuch, that, in the one case, the patient loses his limb—in the other, he keeps it on, and is neither deformed nor lame. This could scarcely be expected from reasoning on the subject, especially on the operations of large joints, when we consider the severe and highly dangerous constitutional derangement following the slightest

wound of such in the healthy state. But it would appear, that diseased joints, with or without caries, do not take on the same actions; nor does the interference with such give rise to the same disturbance in the system, as an operation on a sound joint would produce.

The instruments by which the operations are to be performed must be well chosen for the purpose, and of sufficient strength. The knife with which the incisions are to be made on and amongst the bones, requires to have a strong sharp point and edge, with a thick back and firm handle. A scoop, graver, or gouge, and strong pliers, with some pairs of cutting forceps, will complete the apparatus, not forgetting the cauteries, in case of need.

The bone forceps, the cutting edge of which is in a line with the handles, such as I have used for some years in these operations, as well as in amputation, will be found excessively useful in all cases, but more especially where the metacarpal or metatarsal bones require to be removed in part.

Forceps, somewhat resembling those I make use of, were employed by some old surgeons for dividing cartilage, a plate of such is given in the *Armamentarium Chirurgicum* of Scultetus. They were also used for removing splinters of bone after amputations, &c.; their use in cases of amputations, and in such operations as I am about to describe, I believe to be new.

Be that as it may, I have found them of great service; and my wish is, that they may prove equally serviceable to others.

It may be thought that I should say something of saws in such operations; but I never found them of the least use. On the contrary, I have witnessed several attempts on the metatarsal bones with the chain saw. It either broke or got so wedged, that great difficulty was experienced in getting it disengaged by the use of some other contrivance, so as to put an end to the operation. The same has been the result in any trials with that instrument which I have made on the dead body.

I may perhaps have seen bad specimens of the instrument; it may perhaps, if well constructed, be found useful in dividing large bones; but the difficulty of conveying it below them must always prove an insuperable objection to its employment.

In the use of the half-headed trephine, the bone must be denuded much higher than where the division is to be made, so that the centre pin may be fixed,—the bad consequences of which proceeding I need not dilate upon; for if it is applied to that part which is to be removed, the instrument cannot be firmly fixed; and the divided end left attached to the system, will present a concave surface, with two projecting points. Another disadvantage is, that, at every turn, the centre-pin must be shifted, which, to say nothing of the delay, and increase

of suffering to the patient, must give the surgeon abundance of trouble and annoyance, unless indeed we follow the plan of Mr. Wardrop (the inventor of the instrument), who told me lately, on making these objections to him, that a sharp pointed centre-pin must be used, which is to be drilled through the bone, as the division takes place. This may answer in the dead body well enough, on which alone it has, I suspect, been used.

The annular saw, so far as I can see, requires most extensive division of the integuments, and is, from its extreme complication, too apt to go wrong in working it.

An account of a new rotation-saw, as it is called, has been lately published by Professor Thal of Copenhagen. It is said to do its work well, and with rapidity. In a public trial on the dead body, amongst others, the metacarpal bone of the middle finger was divided in eighteen seconds.

With the forceps, I may merely mention that the whole operation of removing any of them (even the metatarsal bone of the great toe, which is of double the thickness of the bone supporting the middle finger), incisions and divisions of the bone never occupies so much as fifteen seconds; and some of these operations may be performed in less than ten seconds.

It has been objected to my mode of dividing the bones by the forceps in the smaller amputations, that splinterings will take place, and the cure be thus retarded. This never does occur; the smooth side of the forceps is applied towards the body—the end left is as smooth as if divided by the finest saw, and appears to me to be in a more favourable state for healing.

The fact that it does heal as readily and speedily, if not more so than if the saw had been employed, must set the question at rest. The end removed is sometimes a little ragged; but this is, of course, of no consequence.

In all young patients under six or seven years, the bones of the thigh, arm, leg, and fore-arm, may be divided with perfect ease, by means of large cutting pliers, without the least splintering, and, in adults, all those of the metatarsus and metacarpus. Amputation of these latter bones has been rendered easy beyond all conception by the use of the forceps. The division of the sole of the foot, or palm of the hand, can be readily dispensed with, when the bones are thus divided. This is desirable in many instances, though perhaps the cure is not so rapid as when a free passage is allowed for the matter in both directions.

In removing the fore or little fingers, great or little toes, a flap can be saved from their sides; and it may be made either by pushing the knife through and bringing it out, or by cutting from without. The intermediate fingers or toes are removed by cutting on the back, from the point at which the division of

the bone is to be made on each side, making the incisions meet near the distal end of the metacarpal or metatarsal bone on the palm or sole; the bone is then divided and turned out, leaving the soft parts untouched below.

Or a long sharp-pointed bistoury is run from the junction of the finger, so high as is thought proper on one side; it is then entered on the other side of the bone, and cut out. On securing the vessels, the edges of the wound are approximated by a firm bandage. So simple and expeditious withal is this mode of removing these bones, that the amputation of the largest or most difficult may be easily effected in from ten to fifteen seconds.

But a few days ago, the extirpation of a great toe and metatarsal bone occupied me fourteen seconds, though, from its great strength, I was under the necessity of changing the forceps I first took up, for a stronger pair. I mention this fact, to show the superior quickness with which a surgeon is enabled to put an operation out of hands (which, whatever it may be to the surgeon, is a matter of no small moment to the patient), not that I am by any means an advocate for performing operations by the stop-watch; but, consistently with safety to the patient, the more celerity that is employed the better. No man will willingly submit to quarter or half an hour's torture, if he can have the same business done, in an equally good or better style, in quarter or half a minute.

I may, in conclusion, mention, in regard to the forceps, that they have met with the approbation of many good surgeons, and, in particular, of one very great one, M. Baron Dupuytren, who has not only approved highly of them, but also used them publicly. For the details of the practice, in particular circumstances, I may refer to the cases. It must, of course, be modified by the state and extent of the parts involved.

The extent of the disease, the size of the joint implicated, and the state of the patient's health, may render the practice of removing the diseased parts only, impossible or imprudent; and for such reasons only can the operation of amputation be with propriety had recourse to.

History of a Case of Hydrocephalus Chronicus, in which Paracentesis Capitis was performed. By Mr. Robert Brown, Surgeon, Preston; Fellow of the Royal College of Surgeons, &c. London.

(From the London Medical and Physical Journal for February, 1824.)

The division which has been made of hydrocephalus into acutus and chronicus, is, I think, very judicious and practi-

cal, and furnishes us with a correct notion of the pathology of these varieties of the same disease,—the one variety truly sthenic, the other asthenic. The former is, from the commencement, to be considered as a genuine instance of idiopathic phrenitis, and the indication of treatment to be such as will lessen the momentum of the circulation within the head. Such objects are to be fulfilled by the rigorous adoption of those measures denominated antiphlogistic, and the free use of topical evacuants. By an early and liberal employment of these, few cases of hydrocephalus acutus, if seen at the onset of the disease, will fail to be arrested, and prevent the deposition of that fluid, which constitutes an important, indeed principal, feature of the complaint.

I pretend not to offer any remarks on the difficulty of distinguishing the *acutus* from those diseases which are occasionally found to simulate it: attention to the symptoms present during an attack, coupled with the history of the little sufferer, will generally, I am persuaded, lead to a discrimination of the true nature of the ailment. The object of my present communication is the history of a case of hydrocephalus chronicus, in which the operation of paracentesis capitis was resorted to: but, although in this case it was unsuccessful, I am led to request its publication, which will, when considered in conjunction with the already-published cases, afford strong grounds for hope that, could the prejudices of the relatives be removed, I am almost so sanguine as to think that we have at length acquired the much wished-for desideratum for the cure of this hitherto-deemed incurable disease. Even in the most hopeless cases, it may, I think, with great propriety, be proposed as a dernier resource for the palliation of those disagreeable symptoms of a disease, which the carelessness of friends have suffered to proceed to such a length, and when, under such unfavourable circumstances, the employment of the ordinary means would be both futile and useless. The removal of so much fluid as is usually present in the chronic form of this disease, by the most vigorous activity of the absorbent system, aided by the use of the other auxiliary means that have been proposed, is not ever likely to be realized in practice.

Paracentesis capitis, in the chronic form of hydrocephalus, holds out great hopes of eventual success, provided the operation be early employed,—immediately a sense of fluctuation becomes perceptible; and repeated at short intervals, so as gradually to remove the degree of distention, and prevent the disorganization of structure, which is apt to occur from the accumulated bulk of fluid. The great extent of the disease, and the degree of mischief which the brain will suffer with apparent impunity, regarding the sensorial functions, is truly amazing, and

21st.—The child is quite playful; motion of the limbs free; paralytic state of the right side gone; eyes can be steadily directed to any object, and susceptible to the slightest external impressions; pulse 165; bowels open, and fæces of a yellow colour; urinary discharge copious; cough more troublesome.

℞. Oxymellis Scillæ, f. ʒiij.
Spiritus Ætheris Nitrici, f. ʒij.
Træ. Camphoræ comp. f. ʒij.
Træ. Digitalis, ♏ xxx.
Aquæ Menthæ Pip. f. ℥iij. fiat mistrua sumat cochl. parv. ij. tertia omni horâ.

23d.—Pulse 150. Bowels open, fæces of a green colour; urine plentiful; strabismus occasionally affects the left eye. Mother complains that its nights are spent in a very restless way. It frequently moans; fontanels a little more puffy, with a sense of fluctuation. Roller reapplied, and the medicines directed to be continued.

24th.—Has been very restless all night; strabismus sometimes visible at this visit in both eyes; bowels free; pulse but little varied; the vertex much more prominent, and fluctuation more distinct, than yesterday. I proposed a repetition of the operation; but, although decided relief was obtained by the former operation, the mother pertinaciously refused even to listen to our proposal, stating she had no faith in any thing that could be done, and steadily objected to any further attempt being made: she should rather, she said, wish the child to die, than put it (as she foolishly thinks) to more punishment.—A large quantity of the ointment ordered to be rubbed in.

26th.—Pulse 156, and stronger; bowels very open, fæces green, and mixt with skins; cough gone. Mother still complains how ill the child rests in the night. The eyes appear to-day free from strabismus; hectic flushes have appeared several times upon the cheeks both yesterday and to-day, with partial sweats upon the head and face. Ointment continued, and mixture discontinued.

29th.—Child this morning quite playful, and, when I entered the house, the mother was tossing it about. Has had no strabismus, no hectic flushes, &c. since last report. The integuments covering the fontanels, on taking off the roller, became flaccid, without any sense of fluid. Pulse 157; bowels open.

October 1st.—Child very cross, and has often its fingers in its mouth, as though it was suffering in part from dentition. Pulse 150; bowels very loose, fæces yellow; urinary discharge plentiful.

4th.—The mother informs me that the child yesterday had great twitchings of its hands and legs. Eyes, I observe, are

occasionally, this morning, affected with strabismus; is very cross; cough has again troubled it; fluctuation more distinct at the anterior fontanel. I have this morning applied straps of adhesive plaster instead of the roller, which will afford more equable pressure and support. I have discovered that the mother has very imprudently been gossiping with the child in her neighbour's, and also neglected the use of the ointment.

6th.—Child is very cross, and always, when awake, rubbing its gums; diarrhœa profuse; appearance of the head similar to that described in last report.

℞. Misturæ Cretæ, f. ℥iv.
Træ. Opii, ♏ x.
Træ. Catechu, f. ℥ij. fiat mistura.
Sumat cochl. magnum post singulas sedes liquidas.

8th.—Child out when I called: it is very quiet during the day, but fretful and cross during the night; the head appears to be better supported by the muscles of the neck; fluctuation of water more evident than at last visit; diarrhœa abated; a strophulous eruption covers the body.—Ointment still to be continued; absorbent mixture omitted.

10.—The head appearing more enlarged, and the accumulation of fluid more obvious, I again strenuously urged the necessity of our resorting to the operation; but no arguments will prevail with the stubborn mother to allow us the required permission, in consequence of which I shall suspend my attendance, until I am solicited to renew it.

16th.—The child's father waited upon me last night, and apologised for the obstinacy of his wife, in not allowing me to act towards the child as I deemed fit. He requested me to call this morning; and, if I thought the operation held out any prospect of benefiting the child, he gave me full discretionary power to act accordingly. The child is greatly altered in appearance since my last visit: it lays in a perfectly comatose state, and, to use the expression of the friends, "is blind with its eyes open." The eyes devoid of sensibility, and apparently sunk within the orbits; integuments of the cranium exceedingly tense; the measurement of the head as follows:—in circumference, 18½ inches; from ear to ear, 11¾. Bowels stated to be constipated. I again performed the operation in the same manner as before, in the left side, in the anterior fontanel, about mid-distance from the superior longitudinal sinus; but nothing except blood escaped by the cannula. I made another puncture about an inch distant from the first externally. Blood also flowed at first from this orifice, and several pieces of brain were discharged; by varying the position of the cannula, water of a sero-sanguineous colour, f. ℥ixss. escaped. Firm pressure was

applied to the head during this discharge. After the operation the child became very sick, and vomited, and had a large alvine motion: soon afterwards the sickness subsided, and the child became perfectly sensible, and directed its eyes to surrounding objects, and smiled when noticed by the mother. Roller applied.

℞. Hydrargyri Submuriatis, ℈j.
Pulveris Digitalis, gr. iv.
Mucil. G. Acaciæ, q. s. ft. pil. vj. Sumat j. omnia 8ta horâ.

17th.—The child is very fretful; strabismus again present, and head apparently tense. Bowels open.

18.—This morning the child is quite lethargic; complete paralysis prevails; integuments of the head quite distended; bowels still open. A small quantity of fluid having oozed out of the wound made in the last operation, I chose it again for the purpose of introducing the cannula, and without any difficulty drew away f. ℥vj. ʒij. of a similar coloured fluid as removed on the former occasion. After the operation, the child became much more sensible, and all the previous alarming appearances vanished. Compression during the operation, as before; afterwards, the adhesive straps.

19th.—The child has had a very good night, and this morning is very lively, and its general appearance materially amended. Bowels very open; fæces varying greatly in colour. Ointment and pills to be continued.

20th.—This morning the child has again become comatose; no part of the eyes appear but the conjunctiva. It has a very cadaverous look, the integuments appearing distended. I again introduced the trocar at the frontal angle of the right parietal bone, and drew away, in one continued stream, f. ℥ivss. of blood, which coagulated immediately in the vessel in which it was received. During the operation the child was once or twice very sick, vomited, and had convulsive motions of the body; stertorous breathing, with a distressing moaning noise. I remained with it about half an hour, expecting every moment to witness it expire. In about an hour after the operation, it partook of a small quantity of the breast; and, in the evening, I learnt it had continued all day to manifest the same death-like appearance.

21st.—It has still the same moribund appearance as yesterday. The cranial integuments are again very tense, from (I fear) internal hemorrhage. Bowels open; takes the breast occasionally in a voracious manner; at other times has not the power either to hold the nipple or to swallow.

22.—A messenger came in great haste this morning to acquaint me "that the child's head had burst, and a great quan-

tity of bloody fluid had come away." On my arrival, I found the fluid to have escaped from the puncture made on the 18th; from appearance, several ounces must have been discharged. I introduced a probe into the orifice, (being the only instrument the mother would permit me to use,) and employed pressure to the sides of the head, by which means I removed f. ℥iiss. of a bloody-tinctured serum. Roller to the head again resorted to. The child, since the loss of the fluid, has experienced an obvious amelioration; vision is again restored, and unattended by strabismus. Child takes the breast, and can support its head tolerably well. Bowels open.—Pills continued, and ointment discontinued.

23d.—The child has recovered most surprisingly; has again become playful, and sensible to surrounding objects, and to the caresses of its mother: it is sometimes stated to be cross. Bowels free; a bloody-coloured fluid continues to ooze from the wound, and parents think as much or more than our last report states has been discharged. I introduced a director with the groove downwards, which facilitated the escape of f. ℥iss. of the same coloured fluid as before. Integuments quite flaccid, and overlap. Roller reapplied.

24th.—Towards the evening of yesterday, the child was seized with a convulsive fit, but it had ceased from about noon to take the breast: the convulsions became more severe till near midnight when it became perfectly calm. It awoke the mother about two o'clock this morning, by the rattling noise it made in breathing, and in about half an hour from this time, whilst in an apparent slumber, it quietly expired. With great difficulty I obtained permission to inspect the head. Assisted by the friend who aided me in the operations, and by two medical pupils, to-day, at six o'clock P.M., I made the following hasty

Dissection.—The integuments were divided from ear to ear. Each department of the skull was easily separated, owing to the bones being held together by membranes only. Dura mater firmly adhering. Tunica arachnoidea easily raised. Cerebrum very pale, and extremely soft. On separating the hemispheres, a quantity of water escaped, so as to prevent me from making a methodical demonstration of the parts: even the accidental movement of the head occasioned a gush of water to burst up the corpus callosum, and lay open the lateral ventricles. Through the rent in the corpus callosum, was observed the foramen of Monro, so enlarged as to admit the extremity of the finger into its orifice. The fornix, from the pulpiness of the brain, could not be distinctly shown: its two anterior crura were, however, very visible. The infundibulum somewhat increased in size. The lateral ventricles greatly enlarged, and their parietes extremely thin; they were distended with a sero-sanguineous co-

loured fluid. In the posterior cornua of the left lateral ventricle was observed a piece of coagulated blood, about the magnitude of a hazel-nut. The choroid plexus very pale, and covered with a large cluster of small hydatids. From the free communication existing between each ventricle, water was found in all. The quantity of fluid removed by the examination amounted to about a quart.

Letter to John Thomson, M.D. Edinburgh, containing Observations on the Occurrence of Small-pox after Small-pox and Vaccination. By WILLIAM STOKER, M.D. Dublin. Communicated by Dr. Thomson to Dr. Duncan, junior.

(From the Edinburgh Medical and Surgical Journal for January, 1824.)

Dublin, October, 1823.

Dear Sir,—Desirous to avail myself of an opportunity of expressing my sense of the great value of the Jennerian discovery, and my respect for its author, as well as to conciliate public opinion by the sanction of his name, I dedicated to him the little Treatise, which contained my contribution in aid of the very anxious and general inquiry, set on foot a few years past, by those who like myself, deemed it a duty to investigate the alarming reports then in circulation, of frequent failure in vaccination, to give security against the contagion of small-pox. Convinced, however, by all my observations, and especially by those which I have made on that subject within the last nine months (a period during which variolæ, and some other of the sporadic diseases of this country have been epidemic), that the value of Dr. Jenner's discovery, to be duly estimated and firmly established, requires still further investigation, I beg leave to address the following letter to you, who have, in your inquiry and publications on the nature and extent of the security afforded by vaccination, evinced so active an interest for its success.

In this letter it is my intention to state some facts which latterly came under my notice, and appeared to me well calculated to assist in establishing just principles and fixed opinions with respect to vaccination, so very desirable on a subject of such deep and general interest; and conceiving that it may be useful in that way, I am very desirous that it should be published with such a mark of your sanction, in any of those respectable Journals that issue from your city, or in such other way as you may be pleased to direct.

With permission, I beg leave further to preface the cases with which I intend to illustrate some observations on secon-

dary small-pox, by remarking, that the opinions expressed in my Observations on the varioloid disease, published in 1821, were formed, without any previous knowledge of what you had written on the subject, particularly with regard to the identity of the origin of the various pocky exanthemata; but in making this remark, it is obvious I cannot mean to interfere with the priority of your opinions, but deem the statement interesting, inasmuch as the unbiassed coincidence, which took place in our deductions from similar facts observed in places remotely separate from each other, adds presumptive evidence in their favour, and, at the same time, affords me an opportunity of stating, that had I been aware of your authority, I would most satisfactorily have referred to and relied on it.

Case I.—Miss ——, resident at Rathmines near Dublin, 22 years of age, had been generally healthy excepting slight bilious complaints, to which she had been sometimes disposed, and those which will be afterwards mentioned, until Monday the 28th July, 1823, on which day she was suddenly and violently seized with fever, accompanied by præcordial oppression, mental anxiety, loss of rest, and severe pain in the back and loins. For these symptoms, leeches to the temples and active purging had been employed, under the direction of surgeon Ryall.

On my first visit, the 30th July, fever was extremely urgent, accompanied by moaning, anxious countenance, total loss of rest, hurried respiration, impeded by spasmodic pains in the stomach, tending to the back and left side of the thorax; frequent jactitation of the body and limbs, &c.; slight delirium; pulse 140, full, but unequal and irregular; tongue loaded and brown, but soft; catharsis urgent; skin hot in general, but rather cooler than natural on the feet; thirst still urgent, though somewhat abated since diaphoresis commenced. A general blush, most vivid on the face and neck, was diffused over the whole surface, and, on closer examination, a thick eruption of minute red points (such as Sydenham designates the first appearance of small-pox) was then beginning to show itself. Her parents however stated, that at six months old she had been inoculated by Mr. Sowan with small-pock matter, which was then succeeded by pustules on various parts of the body, and which went through their usual course. A bad sore, however, succeeded the puncture in the arm, which was a long time healing. There is now a deep and extensive cicatrix on the arm which had been so affected. There are many broad but not deep pittings to be seen, especially on the back of the neck, left by the swine-pock, which this patient is stated to have had very severely. About eight years ago she also had measles and scarlet fever. *Prescribed.*—The head to be shaved and washed with camphorated spirits of wine, a blister to the back of the

neck, and the feet to be fomented by flannel and hot water; an anodyne draught at night; barley water for drink.

Second visit, 30th July.—A very restless night, but some sleep towards morning. The eruption is now elevated with deep-coloured bases. It is chiefly vesicular, but in many places pustular. It is confluent on the face, and the discoloration extends considerably over the cheeks, which are somewhat swelled; and it is diffused very generally over the trunk and extremities. No catharsis since the anodyne draught was taken. The pain of head, stomach and back, easier; pulse 120, and regular; the renal secretion scanty, crude, and turbid. *Prescribed* an enema in the evening, and eight grains of anodyne powder at bedtime.

August 1st, report.—Some rest, and feels better to-day; pustules considerably increased in extent, and their inflammatory bases and the interstices between them of rather a higher colour, accompanied by a considerable swelling of the fauces. Some griping, and the alvine discharges scanty, and greenish. *Prescribed.*—An aperient absorbent mixture, and the anodyne powder to be repeated.

August 2d.—Slept well, and feels better; pulse 100, bowels free; pustules more fully maturated, many of those on the face having a depression in their centres.

On the three succeeding days fever declined, and the pustules rapidly desiccated, and the scabs fell off much sooner, and left the parts underneath of a lighter colour than I have witnessed in other cases of varioloid disease. Considerable delicacy of health however remained, and tendency to slight fever in the evening, for nearly a fortnight afterwards.

Case II.—Patrick Buckly, five months old, infant of a patient in Cork-street Hospital, was (with its mother's permission) inoculated at my request by Mr. Hall the apothecary, with matter which I took from the pustules when fully maturated in the preceding case. The matter was inserted on the child's arm on the 4th August; aperient and alterant powders prescribed at the same time. On the 12th, the punctures exhibited signs of the new action produced by the virus introduced; and on the 13th, two distinct vesicles were formed on one puncture, and three on the other; and on the succeeding day these vesicles were farther distended and pustular, unaccompanied by any unfavourable symptoms, either local or general.

From these pustules I took matter, for the purpose of further inoculation, but have been deterred from employing it, from the unfortunate sequel of this case; for the mother of the child having been herself for some days convalescent from fever, could not be restrained from returning home many miles from Dublin, and taking her child (which she suckled) along with

her. On the 22d August, she again presented herself at the gate of the hospital for admission, having relapsed in fever, probably from the fatigue of her journey, with the child also in a high degree of fever, and covered over with the confluent pustules of small-pox. Both being placed in a ward under the immediate care of my colleague Dr. Harkan, the symptoms went on favourably for several days, the mother becoming convalescent on the 5th day, and the child's fever gradually subsiding until the 2d September, when he was seized with convulsions, with which it seems he had been frequently attacked, having commenced soon after his birth. On the present occasion, they were suddenly fatal. Although I conceive that the injurious effects of the journey on the child and its mother, did in this instance materially influence the succeeding course of the disease; and though possibly the epileptic attack might have been fatal, if the small-pox inoculation had not taken place, yet the event must be deemed interesting, especially in connexion with the succeeding cases, which occurred in the brothers and sisters of the young lady from whom the matter was taken. Although vaccinated, they caught the disease from her without inoculation, and had it in a much milder degree. It is also worthy of remark in this place, that surgeon Rumley of French street, who, at my request, took matter from the pustules in the first case two days before I did, informed me that he inoculated two children with it, one of whom had been vaccinated, and another with whom no antidote had been employed; and that in neither case was there any other consequence from the inoculation, than would be produced from a similar wound from a clean lancet. The child not vaccinated, however, was attacked with measles in a few days after inoculation, and that disease went through its regular course, and was not succeeded by small-pox.

Four cases of small-pox after vaccination, or those of two brothers and two sisters of the young lady whose case is given above, may all be given under the same general description. Their ages were 12, 14, 16, 18 years,—all had been vaccinated by Dr. Tuke, and all had that cicatrix which is generally deemed the mark of having undergone complete antidotal process of vaccination. Three weeks nearly elapsed between the sickening of the first two of these, and the convalescence of their elder sister, and nearly a fortnight more before the two last sickened.

The eruptive fever was severe and urgent in all of them, the eruption appearing on the third day; and all had numerous pustules fully maturated and desiccating, and also in some of them leaving slight pitting, as in small-pox. There was no secondary fever in any of them; they all were convalescent on

the seventh day, and did not require any medicine, except a mild aperient.

I have selected the foregoing cases, as they appear to me well calculated to illustrate some observations which I propose making on the remarkable frequency of secondary small-pox, during the epidemic prevalence of that disease in Ireland during the last nine months; a frequency which has been observed by many of my medical friends, as well as by myself, some of whom I shall mention in the order in which I conversed with them on this subject.

My friend the Surgeon-General, Mr. Crampton, who had long before witnessed the supervention of small-pox after vaccination, and the modifications of that disease thus produced, informs me, that he has seen several cases of it during the current year, in some instances severe in its course, and extending by contagion through families, but more generally mild in its symptoms, and without any secondary fever. In one instance, the patient had had small-pox in a very severe form from inoculation, 28 years before.

Dr. Mills saw two cases of secondary small-pox; one, that of a young baronet, which he saw in consultation with Dr. Graves, it being a case of great urgency, though the patient had been vaccinated, and subsequently inoculated with small-pox; the other was a young gentleman, a student in Trinity College, who had been also vaccinated, and in whom also the symptoms of confluent small-pox were extremely urgent.

Dr. Colles saw several cases of this kind; in one of whom, a young lady, the symptoms of confluent small-pox, after regular vaccination, were very alarming, until the eleventh day, when they suddenly subsided, leaving, however, very deep and extensive pitting over the face and surface of body; in the other, a young gentleman of adult age, the patient was carried off by the violence of the eruptive fever on the second day.

Dr. Cheyne, the physician-general, has lately seen many cases of small-pox after vaccination, and some cases even after small-pox inoculation.

I might add many more respectable testimonies to the foregoing; but deem these sufficient, along with those which I have adduced in my Observations on the varioloid disease, published in 1821, to prove the frequency of secondary small-pox in latter years, and especially since the introduction of vaccination,—an occurrence so very rare formerly, that Dr. Tissot, writing in 1772, and doubting that it ever happened, adds, "Dr. Monro, in his late extensive inquiry upon this subject, has not, among all the practitioners of Scotland, been able to produce a single instance where the disease has been twice received; but, on the

contrary, detects the fallacy of several such histories as had been offered to him."

The observations I have to make on the cases which I have adduced, refer chiefly to the course of the symptoms in the case of the young lady first detailed, being in many circumstances similar to what has been observed when small-pox extends to those who had been previously vaccinated; such, for example, as the diminished size of the pustules, but particularly the absence of secondary fever,—circumstances which corroborate the testimony of the parents and friends of the young lady, of her having previously had the disease.

Of its being genuine small-pox, the result of the inoculation with the matter taken from it, leaves no room for doubt; but it is very remarkable that so severe a disease was produced by the inoculation of matter from it, when it is recollected that the M'Cleods, whose cases I published in my Observations on this subject, had it in a modified form, from having caught it from those labouring under it after vaccination, although they themselves never had been inoculated with either variolous or vaccine matter.

The occurrence of an ill-conditioned sore on the part where the puncture was made in inoculating with small-pox, in the first case detailed, is worthy of remark in this place; as perhaps it was on this account (as happens with vaccination), that its complete and antidotal influence was interrupted.

Such facts and observations, it appears to me, may be usefully applied in estimating the antidotal efficacy of vaccination, since it is found, that during the prevalence of small-pox epidemically, as happened in the latter end of 1820, and beginning of 1821, and also during the last ten months in this country, cases of secondary small-pox have been met with in extraordinary frequency; and, in the same periods, the protection by vaccination is also stated to have very frequently failed. It would appear also, from the first case reported here, as if morbid actions of the part inoculated interfered with the antidote, and farther evinced the similarity of their natures.

With respect to the *constitutio epidemica*, or that increased predisposition in the constitution to be affected by diseases at particular periods, though it might be more astute to acknowledge the inscrutable difficulty of the subject, I cannot help adverting to an observation which occurred to me when lately tracing the course of the influenza,* which prevailed for some time past in this country, combined with small-pox and other sporadic diseases, that the animal fluids being then very gene-

* See Pathological Observations on Dropsy, Purpura, &c. &c. Page 209. Dublin, 1823.

rally (but especially the blood itself) found altered, it is at least probable that this *constitutio epidemica* consists in that change of the fluids produced by certain states of the weather, previously to which, small-pox inoculation or vaccination would have afforded a sufficient protection.

That the fluids are primarily and chiefly engaged in small-pox, is an opinion I conceive well established by the observations and experiments of Dr. Walker, in his able Inquiry into the Small-pox, published in 1790,* although his experiments may not have afforded the full evidence in favour of his chemical theories which he expected. It is here, however, to be observed, that the varioloid disease, or that form of small-pox which has been latterly so often noticed as occurring after vaccination, although modified, yet is not so essentially changed from the primitive form, as the others of the pocky exanthemata, to which the antidotal process of inoculation and of vaccination still leave the human body susceptible, seeming to arise from some disturbance in the antidotal process, from causes such as were stated in the first case detailed here, and such as are found to act in a still more remarkable degree in cases of vaccination.

That the disease still preserved the genuine characteristics of small-pox, was evinced in the first case related here, by the inoculation with the matter taken from it having produced an exquisite and severe form of that disease; and in the cases of the M'Cleods, which I reported on a former occasion, which went through the small-pox in its modified form, from having caught it from those who were affected with it after vaccination, and yet were found protected; so that inoculation with small-pox or vaccination, subsequently tried with them, had no effect.

Being of opinion that the varioloid disease which has been of late chiefly observed, is, as well as the other pocky exanthemata, derived from genuine small-pox, the common origin of them all, I am inclined to hazard another conjecture, that it is only the peculiar virus of each which can give protection from the various forms which they assume, after having once emanated from the parent stock,—*forms* which characterize them in each future transfer *ad infinitum*.

The laws of propagation by the seeds of vegetables, afford some illustration of these phenomena in the *semina* of diseases. Take (for example) the potato, the *solanum tuberosum*, to us here at least a homely example. If its seeds, taken from the perfect form of the plant which produces them, shall be

* See an Inquiry into the Small-pox, Medical and Political, &c. By Robert Walker, M. D. Page 75. London, 1790.

sown, almost every variety will be found to grow from them; but let these be propagated either by cuttings or shoots, and they will always preserve exactly similar forms to those from which they were propagated.

The practical corollary that may, I think, be fairly and usefully deduced from such facts, to which, in concluding this letter, I beg leave to call your attention, consists chiefly in the increased evidence of the antidotal efficacy of vaccination, in a very large proportion of the cases in which it is employed; and that even in almost all the remainder, though perfect immunity from the contagion of small-pox is not always given, yet, generally, in these a much milder disease, as well as of shorter duration, is produced, than in those who had not been previously vaccinated.

These well established data fully warrant the general adoption of vaccination; but, on the other hand, the increased numbers latterly found susceptible of small-pox after vaccination, more than at former periods, urgently demand constant attention, and fully justify the employment of tests by which the security of those vaccinated may be ascertained; especially since it appears that, when small-pox is rife, many suffer from its baneful effects, who, relying on the security of the antidote employed, had indulged in confident feelings of security.

It is perhaps unnecessary to add, that these tests, whether the inoculation with variolous or vaccine matter, or the exposure of the vaccinated (as on a former occasion I ventured to recommend), should be employed when small-pox is not epidemic, as, at other times, the unprotected are more liable to be affected with the worst and most fatal forms of that disease; and I shall here but briefly advert to the additional evidence which the late epidemic afforded, that the fluids in small-pox are materially engaged,—this opinion, and the practical suggestions which it supplies, being so fully set forth in Dr. Walker's inquiry into the small-pox which I have already quoted.

The objects proposed in this letter are offered as the only apology I can plead for addressing it to you, or for occupying so much of your time on a subject with which you are so conversant; but, on the other hand, reminded of the limits to which it should be confined, these will, I trust, excuse me to those who may consider the details I have entered upon not sufficiently extended. I have the honour to be, dear Sir, very respectfully, your obedient servant,

WM. STOKER, M. D.

To Dr. Thomson, M. D.
&c. &c. &c.

Edinburgh, 5, George-street, November 15th, 1823.

Dear Sir,—I avail myself of the opportunity which Dr. Stoker's communication affords, of stating, that since the publication of my "Historical Sketch of Small-Pox," in January, 1822, scarcely a week has elapsed in which I have not seen this disease, or been informed by my medical brethren of its existence, in some quarter or other of Edinburgh. It has continued to attack persons who had previously passed through small-pox, whether natural or inoculated; and those who had been satisfactorily vaccinated, as well as persons who had not gone through either the small-pox or the cow-pox. The attacks of small-pox have been very malignant and fatal in a large proportion of the unprotected; severe in several of those who had previously passed through small-pox; and severe, sometimes, also, though generally mild, in those who had gone through the process of vaccination.

The general results, therefore, of my later observations and inquiries, have appeared to me to confirm the validity of the opinions which I expressed to you in a letter inserted in the 56th Number of your Journal, with regard to the incalculable advantages to be derived from the practice of vaccination—the frequent occurrence of small-pox for a second, or even a third time in the same individual—and the identity of all the kinds of varioloid eruptions described by practical authors under the names of Genuine and Spurious Small-pox.

I beg leave to add, that after an attentive consideration of the *Test Pock* of Mr. Bryce, I have been led to believe that it bears the same relation to the primary cow-pox, which secondary small-pox bear to primary small-pox; and that if medical men, previously to the introduction of vaccination, gave the name of *Varicella* to varioloid eruptions, many of which we have reason to believe were cases of secondary small-pox, we may now, I conceive, with equal propriety, give the name of *Vaccinella* to secondary cow-pox. Cow-pox modify cow-pox, as small-pox modify small-pox; and these diseases produce each a diminutive or spurious pock, in being reciprocally modified by one another. These analogies between small-pox and cow-pox are as curious in a speculative, as they are important in a practical point of view. I remain, dear Sir, very faithfully yours,

JOHN THOMSON, M.D.

To Dr. Duncan, junior.

On Urinary Vaginal Fistula. By WILLIAM CUMIN, M. D. Surgeon to the Glasgow Asylum for Lunatics, and one of the Surgeons of the Royal Infirmary.

(From the same.)

Perhaps there is no disease which, without endangering life, tends to render it more truly miserable, than that species of urinary fistula which occurs in females, in consequence of sloughing of the vagina after parturition. This injury may be caused by the pressure of the child's head in very tedious labour; but it is more frequently the effect of ill-directed attempts to deliver by means of the forceps. Such cases, I am sorry to say, are by no means of rare occurrence, particularly among women in the lower ranks of life, who are slow in applying for proper assistance. The hopeless nature of these fistulæ is generally acknowledged, and by many they are at once abandoned as incurable. M. Richerand, who deservedly ranks high among the surgeons of France, concludes his remarks on this disease in the following words. "Des ablutions fréquentes et l'usage d'une pessaire de gomme elastique, construit en forme d'urinal, peuvent *seuls* diminuer les inconveniens inseparables d'une aussi dégoutante infirmité."—*Nosog. Chirurg.* t. iii. p. 545.

Although such language is but too often borne out by the distressing obstinacy of these fistulæ, there are on record several cases in which they have been successfully treated, and a cure obtained after a longer or shorter interval. The following case is, I trust, not undeserving of attention, on account of the extreme suffering of the patient, her speedy recovery, and the mode of treatment which it was judged most advisable to adopt.

H. MILLAN, a married woman, aged 22, became my patient in the Royal Infirmary, November 11th, 1818, when the following particulars were collected from her. Five weeks ago, at the full period of gestation, she was seized with labour-pains about noon, and the waters came away about an hour thereafter. On the evening of the third day, the head having made no satisfactory progress, an attempt was made to deliver by the forceps, but without success. After an interval of two hours, the instrument was again introduced, and the child extracted. Eight days after this the lochial discharge ceased, and the patient then observed that her urine escaped by the vagina. After another week, the urine continuing to pass in the same direction, a slough of one inch in length, and a quarter of an inch in breadth, was discharged from the vulva. One of the surfaces of this substance felt extremely rough, from a quantity of sandy matter by which it was covered. Since that time, her urine

has continued to drain away from the vagina without interruption, attended by severe scalding pain. I have rarely seen a more pitiable object than this poor woman was at the period of her admission into the Infirmary; her clothes were so completely impregnated with putrid urine as to render her highly offensive to every one near her, as well as to herself. Sleep had nearly deserted her, and she was distressed with thirst, and with constant pain and sense of debility of the loins. The nymphæ were swollen and inflamed; and the neighbouring skin was extensively excoriated, and rapidly falling into ulceration. Her appetite, however, was still pretty good, and her general health appeared to have suffered little. On introducing a catheter into the bladder, and the finger into the vagina, the catheter was felt bare for at least an inch, through a longitudinal opening which commenced rather more than half an inch from the external orifice of the urethra. She had been under the care of a medical practitioner, who had prescribed for her some powders, but without any good effect.

November 13th.—A sponge was yesterday directed to be introduced into the vagina, with a view to absorb the urine, or prevent its escape; and, should it collect in the bladder, it was to be drawn off by the catheter as often as required. An instrument for retaining a catheter in the bladder was, in the meanwhile, ordered to be made.

18th.—The instrument alluded to was applied last night, and a gum elastic catheter introduced into the bladder. Its extremity, which was left open, was received into a dry bladder filled with sponge. Passed the night without complaint, but is this morning distressed with pain; and a considerable quantity of blood, mixed with urine, has been passed by the catheter; pulse 96; bowels slow. The catheter is directed to be plugged, with a view to allow a small quantity of urine to collect in the bladder, and thus prevent irritation from the instrument; but, should the symptoms not abate within four hours, the catheter is to be withdrawn, the abdomen fomented, and venesection had recourse to. An ounce of castor oil; the feet to be fomented.

20th.—The gum elastic catheter has been exchanged for a silver one; by which the urine now comes freely, its extremity being left open. She feels at present easy, and comparatively comfortable. Catheter to be continued.

28th.—The catheter has been kept in the bladder without interruption; and, when it is plugged, the urine collects to the amount of about half a pint. No urine appears now to escape into the vagina. Continue.

30th.—The catheter having produced a good deal of uneasiness, it was last night withdrawn, and the instrument removed

from around the pelvis. She has passed the night pretty well, and says that the urine does not now come away involuntarily; but that, to prevent this, she is obliged to void it every hour. To remain quiet, and, if necessary, have the abdomen fomented.

December 1st.—Complains only of frequent calls to void urine, which she says is discharged in the quantity of about four ounces at a time. Half an ounce of castor oil, and immediately afterwards an anodyne injection.

3d.—Pulse 64; continues to void urine frequently, and in small quantities. Last night, after receiving an anodyne injection, she slept for a considerable time, and fell into a profuse perspiration. When she awoke, she was seized with rigor, which continued for nearly an hour. Hip bath in the evening.

4th.—Frequency of making water continues. No urine comes away involuntarily, and it seems all to pass by the meatus urinarius. To bathe the vulva with solution of sugar of lead, and anoint the parts with spermaceti ointment. A blister to be applied to the sacrum, and an anodyne draught given at bedtime.

5th.—Says, that since ten o'clock this morning, she has observed her urine to pass involuntarily by the vagina. The blister rose imperfectly. Bowels open. The catheter to be again introduced, and secured as formerly.

7th.—The catheter has remained constantly in the bladder since last report, its orifice being plugged, excepting when she wished to make water. Since eleven last night, no urine has passed but through the catheter; and from that hour till five this morning, she made water only twice.

19th.—She has continued to go on well, the urine being occasionally retained, she says, for twelve hours, and then passed by the catheter. As she complains of uneasiness from the continued use of the instruments, they are directed to be laid aside.

26th.—Since the removal of the catheter, she has experienced no unpleasant feelings in any of the urinary organs; and she now voids urine by her own voluntary effort, at the usual intervals to which she was accustomed in health.

28th.—Dismissed cured, in good health and spirits, the excoriations having been for some time completely healed.

About a week after this, the patient again applied at the Infirmary, and stated to me that her urinary complaints had returned; but on detaining her in the house, and making a careful examination, this was found not to be the case.

On the 4th of May, 1819, Millan called at my house to show herself. She was then in good health, without having experienced any return of her complaint; but she stated, that when she was obliged, by her situation as a servant in a small tavern, to use much exercise, running from room to room, she felt a

call to make water every half hour; and when, from circumstances, this was not attended to, the urine came away involuntarily. On examination, the os uteri felt slightly prolapsed, and the upper surface of the vagina considerably puckered. A month after this, she again showed herself. Her general health was good, and she was free from complaint, excepting occasional attacks of incontinence of urine, after using much exertion. The os uteri was nearly in the same situation as when last examined; and on separating the labia, the upper internal surface of the vagina was seen protruding slightly.

In the treatment of this case, I gladly acknowledge my obligations to the writings of M. Desault, who has spoken in confident terms of the advantage to be obtained from the judicious and persevering treatment of such fistulæ. It was from this author, that the idea of the instrument by which a catheter was retained in the bladder, was derived. (*Œuvres Chirurg.* t. iii. p. 299.) The instrument which I employed, consisted of an oval steel spring covered with leather, and made so as to clasp round the pelvis and fasten over the sacrum; with straps to pass under the thighs, and prevent it from shifting upwards. In the centre, which rested on the symphysis pubis, a piece of metal was screwed on so as to admit between it and the spring a curved stalk, which could be slipped up or down, and fixed with a screw when properly adjusted. At the lower extremity of this stalk, was an aperture, through which a catheter was passed, and introduced into the bladder—then secured in its place by means of a narrow tape. In this manner a fixed point was obtained, and the motions of the catheter rendered inseparable from those of the bladder and pelvis.

Although I thus availed myself of the ingenious invention of M. Desault, I did not conceive it proper to guide the treatment of the case entirely according to the directions which that distinguished surgeon has laid down. "Dans le traitement de ces fistules," says M. Desault "on a deux indications à remplir; 1°, s'opposer au passage des urines dans le vagin; 2° *rapprocher*, autant qu'il est possible, les bords de la division pour favoriser leur reunion." (t. iii. p. 297.) For this purpose of bringing the edges of the wound into contact, he directs a plug to be introduced into the vagina, which shall fill the tube without distending it. But it appeared to me, that the introduction of any substance so as to fill the vagina, must necessarily have had the effect of separating, instead of bringing into contact, the lips of the wound. I therefore contented myself with keeping a catheter constantly in the bladder, and allowing the vagina to collapse as much as possible. In cases of recent incised wound of the vagina and neck of the bladder, as in lithotomy, the advantage of bringing the lips of the wound into contact is suffi-

ciently obvious, and the result of Mr. Hey's case, (*Hey's Surgery*, p. 565), evinces its practical utility. But in all cases, such as that of Millan, occurring after laborious parturition, when the new opening is the consequence of sloughing and the loss of substance, the effect of filling the vagina must be to impede, and not assist the cure. Let us figure to ourselves a tube having a portion cut out of its side, and barely filled with the most yielding materials, and we shall then at once see that the edges of the wound cannot possibly, under such circumstances, be in contact. But were such a tube allowed to collapse completely, the lips even of a pretty large wound with loss of substance, might remain in tolerably accurate apposition. Agreeably to these ideas, it seems expedient, that in attempting the cure of such urinary fistulæ, nothing whatever should be introduced into the vagina; and that our principal efforts should be directed to conducting the urine out of the bladder, so that none of it shall find its way through the newly formed opening. Nor is it of small importance that the bladder itself, as well as the vagina, should be kept in a state of comparative collapse: for which reason M. Desault has directed that the catheter should be left open, thus allowing the urine to drain off almost as fast as it is delivered by the ureters. It may be gathered, however, from the details of the case of Millan, that the coats of the bladder, when thus contracted, are liable to be much irritated by the catheter, forcing us to endeavour to confine the urine so as to distend the bladder slightly, or even to withdraw the instrument altogether.

On perusing the particulars of this case, it is impossible to avoid being struck with the rapidity of the amendment which followed, as soon as a catheter was steadily retained in the bladder. Eleven days after this was fairly commenced, no urine appeared to pass by the fistulous opening; and the bladder had so far recovered its healthy tone, as to retain half a pint of urine when the catheter was carefully plugged. The only reason which I can assign for this speedy favourable change, is the very highly irritated and inflamed state of the wound and the parts around it, at the time this poor woman came under treatment. The very sufferings of this unfortunate person were instrumental in accelerating her recovery; for the moment that the inflamed surfaces from which the slough had separated were relieved from the irritation of the urine, a healthy action commenced, and the parts began to contract and close up the fistulous opening. From this observation we may draw the practical inference, that when the edges of such fistulæ have become callous, it will be of essential benefit to apply ointment of cantharides, or some such vesicant, so as to detach completely

the thickened cuticle, and dispose the parts to contract and unite.

The patient whose case has been detailed, although cured of the fistula, continued, when I last saw her, still subject to attacks of irritability of the bladder, after using much exercise. This will not appear surprising, when it is considered that the capacity of the bladder was in all probability somewhat diminished; and that the fibres at the neck of that organ had, without doubt, suffered considerable injury. Some authors have asserted, that in all cases of urinary vaginal fistulæ, when the opening extends beyond what has been called the sphincter of the bladder, a cure is wholly impracticable. But they appear to have forgotten, that the resistance of those circular fibres which close the natural opening of the bladder, is completely overcome by the introduction of a catheter; and that therefore they can have no effect in forcing the urine to find its way through the fistulous opening, which, under such circumstances, is likely to be closed by the collapse of the bladder and vagina, and by the pressure of the uterus behind. In the case of Millan, I am inclined to think that the fistulous opening extended fairly into the bladder; and, in Mr. Hey's case, the wound of lithotomy must certainly have done so.

In a very deplorable case, the consequence of long-protracted and instrumental labour, which came under my care at intervals during the latter part of 1820, a large transverse slough had separated, leaving an aperture through which the finger could be freely passed from the vagina into the bladder: indeed so large was the opening, that, after some weeks, the inverted bladder protruded through the wound, and appeared, on separating the labia, in the form of a vermilion-coloured tumour, covered with transparent mucus. Yet, even in this miserable case, although treated in her own hovel under every disadvantage, by the application of blistering-plaster to the edges of the wound, and by the continued use of the catheter, the urine at length came away wholly by that instrument; the edges of the wound were found in contact, and apparently adhering; and five days thereafter the catheter was withdrawn. But two days after this, while straining at stool, she felt something give way, and, on examination, she found the inner surface of the bladder again protruding into the vagina. Had this poor woman enjoyed the advantage of being treated under more favourable circumstances, with perfect rest and complete separation from her husband, I am sanguine enough to indulge the belief that a cure might have been effected.

Besides these, I have treated two other cases of this species of urinary fistula. One of them remained for too short a time under my care to enable me to judge of what might have been

the result; and in the other, which occurred during last winter, the use of the catheter produced so much irritation of the bladder, and the patient was so harassed by fears lest new injury should be inflicted on that organ, that I was forced to abandon the case as hopeless.

I have been indebted to the kindness of intelligent medical practitioners of this city, for the opportunity of examining two other cases of the same disease. One of them was the consequence of laborious parturition, and, I learned afterwards, fell under the care of a young practitioner, who attempted a cure by means of the suture, but without success. The other was the case of a girl of fourteen, in whom a urinary calculus had made its way, by ulceration, through the lower fundus of the bladder into the vagina, where it was felt projecting. After a slight division of the sides of the wound which embraced the stone, it was readily extracted; and was found to weigh ℈ 13 gr. 4. When I saw the case, a pretty large fistulous communication existed between the bladder and vagina, through which the urine continually drained; but the patient, from a state of great emaciation and debility, was then restored to good health. The very judicious practitioner who had first ascertained the true nature of this girl's complaint, and had relieved her from her sufferings, pressed upon the relatives the necessity of adopting some measures for the cure of the fistula, but, I believe, without any success.

A Letter to John Abernethy, Esq. on the subject of Hernia. By Edward Geoghegan, Surgeon to the Dublin General Dispensary.

(From the same.)

Sir,—I have been always of opinion that my professional brethren were in error as to the nature and treatment of Hernia; and believing that former attempts of mine in print, towards its further elucidation, have failed, I wish to proceed with the explanation, and to engage your attention particularly, whose powers of discrimination and candour I so highly value.

When a part that had been contained in the abdomen has protruded, it is easily returned in general, and is to be retained by bandage. When inflammation occurs, and the part is enlarged far beyond the size of the opening, the case is altered entirely, and requires to be treated accordingly; returning it now ought not to be thought of. All the authorities insist that its immediate return, as before the altered state, is the *sine qua non* of cure, and they practise thus:—One hand pushes the her-

nia at its base up towards the opening; the fingers of the other press at the apex, from side to side, and try, as they say, to get up a small portion, and the rest will follow into the abdomen. At one time the body is recumbent and relaxed, as relaxation is of great moment; at another it is stretched, placed perpendicularly as if on the head, jolted and distorted to disengage the strangulated part. *What a mode of relaxing!* Some conceive that fæcal matter may occasionally be the cause, and try to remove it by pressing with finger and thumb close to the opening, to empty that portion. These manual efforts are conducted with great force by some; and many hands are, in most cases, employed in succession, until stopped by fatigue. Celebrated men say, the hernia is girt as if bound by a cord, and that it is to be forced back into the abdomen, as a first step,—and are very exact that the direction given to the force shall point to the spot from which it descended, clearly that the protruded part may act as a wedge, with due effect, in fulfilment of their curative indication. I object, *in limine*, to the *indication*, as not appropriate. The hernia, in general, had become gradually accustomed to the situation, and performed its functions, free from distress, for a length of time—nay, seemed far more inclined to this situation than to the inside, never remaining within unless held there by bandage. Inflammation, tumefaction, excessive pain, and violent commotion of the system, supervene: it cannot be remedial of these surely to attempt removing the part out of the site to which it was habituated, into the belly, where it might not have been a long time before. Were a limb displaced from its socket, a length of time out, and retained in only by the aid of bandage, to become violently inflamed whilst out, would the indication of cure be, to force it back to the place from which it had been formerly displaced? The principle is the same in both cases. Small *herniæ* have been replaced by force, yet the strangulation was not removed, and death followed. Here the indication was accomplished as advised; and, instead of effecting a cure, prevented it, by placing the gut out of the reach of operation, the *dernier resort*. These reasons satisfy me that the indication laid down is inapplicable, and they are farther strengthened on examining the *modus agendi*. A deep view of the part discloses a fold of intestine, presenting two tubes enlarged by inflammation. The narrow space (containing also the spermatic cord) and rigidity of the surrounding tendons hinder the inflamed coats from expanding: hence they coalesce, a state that closes the tube so as to confine the flatus, and perhaps fæcal matter, the pungency of which adds not a little to the irritation. The circulation is also more or less interrupted. This highly sensible, inflamed and inflated tumour, being pressed from the bottom, the flatus, and

also fluids of its coats, must accumulate above, and still farther enlarge there, so as to prevent, instead of promote, the replacement. The working with fingers close to the tendon is rendered useless by the intervening integuments and tense sac opposing their command of the gut; besides, it is girt (they say) as by a cord,—an insuperable difficulty surely (of their own showing) to it, the girded gut, being moved in any way by either of these manœuvres. The effort to remove the contents with finger and thumb, from the portion next the ring, is advised only after the other methods have failed. This is puzzling indeed. The tumefaction is occasioned by flatus, which is removed as by explosion, not *guttatim;* if uninterrupted, the instant it escapes, distension ceases, and further efforts are not required. Again, the plan of replacing the hernia, by wedging with it, forbids emptying, inasmuch as flaccidity unfits it for the purpose: not a particle of air should escape, the better to preserve its firmness. All this time, violent irritation is applied to highly irritable parts, exasperating to a dangerous extent. The impelled hernia being some inches in circumference, and the opening into the abdomen rarely exceeding two inches, it is physically impossible that the former pass through the latter, unless one is widened, or the other rendered small; also, the force imparted to a piece of intestine could never effect the intention against such rigid parts; and a reduced size can only take place by removing the flatus, which being done, all force is lost. The impropriety of the inverted position of the body, as if on the head, tossing it about, together with pushing, kneading, and otherwise bruising the bowels, strikingly illustrates the prevailing error. This representation, as to indication and practice, is borne out by tangible facts, and is undeniable. Were the manual efforts merely unavailing and hurtless, I would decline commenting on them; but instead of their being indicated, they are contraindicated by every sound principle, and the execution carries destruction instead of safety.

Whoever looks minutely into the disease will find, that its *proximate* cause is a closed state of the intestine, and *proxima causa tollenda* is a settled principle. Irritation having produced the mischief, is strictly to be avoided. Handling and jolting, in the first instance, are most hurtful. There is no indication whatever for replacing the hernia in its former birth. The treatment I advise is constant application of cold water or ice locally, bleeding largely from the arm until the pulse sink—to be repeated, should they rise, every half hour for a couple of hours. These means will lessen the local sensibility and general commotion. Then, but not till then, the hands may be safely applied about the middle of the tumour, to compress

gently, with a view of expelling the flatus, which, rushing through, opens the intestinal tube, and instantly the strangulation ceases. The hand, once applied, ought not to be shifted, because reiterated impulses irritate. If this attempt fails, cold is to be renewed, to which the body may be exposed by opening windows. Strict composure, and a relaxed passive position, agreeable to the patient's feelings, are to be enjoined. We know that a guggling noise always accompanies the removal of strangulation: it is occasioned by flatus separating the coalesced coats of the intestine. This practical fact is of the utmost moment, and at once marks the true nature of the disease and remedy. It is decisive of the soundness of the principle I maintain, namely, that strangulation is remediable solely by rendering the gut *pervious*, independent of replacing it; and that, were its replacement practicable, it is improper until the *pervious* state has been effected. When we break wind backwards, a painful sensation precedes, manifestly occasioned by the confinement of pungent flatus, which, escaping with a guggling noise, terminates the uneasiness. Were the expulsion impeded, distress nearly similar to what attends strangulated hernia would ensue, and be relieved only by extricating the flatus. Confinement of flatus in the sigmoid flexure of the colon, and eructations from the stomach, evince the same thing, yet there are no fasciæ or stricture.

In cases of failure of the plan proposed, operation is to be resorted to, not for the purpose of returning the gut, as recommended, but of allowing it to expand itself, which a very small incision of the tendon will effect; then slight compression will expel the flatus. Instead of returning, it ought to be left outside whilst tumefied, as this state shows the tube still impervious. It may be said that the situation inside the abdomen is favourable to restoring a pervious state; but as there are cases of failure and death, and there is risk, and great force against the sharp border now wounded must be exerted, it ought not to be replaced, if emptying were practicable. After the tumefaction has been removed, the intestine is situated precisely as before; and if it does not adhere, may now be replaced and bandaged to protect it hereafter; but in some cases, the tendency to lie outside is so great, that external aid to keep it inside is unavailing; furnishing still stronger objections to hastily replacing. It is observed, that when a portion of the bowels bursts out at a wound, immediate return of it is necessary certainly; but the cases are dissimilar. Here it is outside the integuments: there is no thickened sac, or covering of any kind—no gradual accommodation of the protruded part to the situation, or lying there at ease, performing its functions free from

complaint; and it is exposed to external injury. Hernia is a protrusion under different circumstances, requiring treatment of another kind. I am favourable to early operation, because it affords a good chance that the intestine is uninjured, the inflammation not extended far, and an agglutination of the villous coat not established: above all, it prevents a continuance of mischievous handling, which latter, I am persuaded, often prevents success in any way. When Desault forbade the taxis altogether, he must have been strongly impressed with a sense of the danger attending it. The main error consists in not observing the distinction between the original disease, which is to be treated by replacement, and the new adventitious affection, which has altered the condition of the parts, so as to present other views and different treatment. I have excluded the consideration of the fasciæ, which have engaged so much attention, I think unprofitably. They are not altered, and are merely incidentally in the way of an enlarging tumour, like the arch of a bridge, accidentally choked up. It is underneath we are to direct our views to diminish the bulk there, in the first instance. When operating, wherever the enlarged tumour is most resisted, there the knife should divide. The representation that the intestine is bound as by a cord, is a palpable error, as it contemplates activity in the tendons, *narrowing* themselves in an extreme degree; whereas, on the contrary, the existence of hernia proves that they are *wider* than natural. The surgeon who has such a view is not warranted in the use of any means, except to lay open the parts, and cut the cording in the first instance. What are we to think here of the practicability of immediate replacement? Having discussed this subject in detail in former publications, I limit my present observations to such points as I think particularly require elucidation, and are of deep interest. Hernia is usually considered incurable, and abandoned to bandaging, for the mere purpose of retaining it. A few cases have fallen under my observation of the disease disappearing on the constant application, night and day, of a truss for a length of time.

I am, sir, with high respect and regard,
Your obedient servant,
EDWARD GEOGHEGAN.

Dublin, August 12, 1823.

P. S.—When the hernia consists of omentum and intestine, emptying the latter will abate the symptoms, although no part shall be replaced.

Case of Inflammation of the Spinal Cord, combined with Inflammation and Suppuration of the Right Kidney; with the Appearances after Death. By WILLIAM JONES, M. D., Surgeon, First Dragoon Guards.

(From the Edinburgh Medical and Surgical Journal for January, 1824.)

The following case, with the appearances after death, affords an example of a complication of disease not very frequently recorded in medical writings, and, perhaps, both in a practical and pathological view, is not unworthy of being more generally known than it would be if confined to the pages of a regimental Journal. I am also not without hopes that the publication of this may draw the attention of medical officers, similarly situate as myself, to the subject of diseases peculiar to the cavalry service, and eventually show, that the occurrence of which I now present an example is not solitary, or very unusual in subjects favourable to its formation.

February 25th, 1823.—Benjamin Hopkins, æt. 20, of sanguine temperament, native of Leicestershire, by trade a stocking-weaver, was attacked, a few days ago, with pain in the region of the right kidney, which is now become acute, and extends, he says, to the chest. He has no cough, but the pain is increased in every action of the diaphragm; pulse 108; skin warm; tongue coated; urine high-coloured; countenance pale, and expressive of suffering from pain.

26th.—Blood drawn last night is covered with a thick buffy coat; return of pain increased on each inspiration; tongue much coated; pulse 120; headach, with thirst.

27th.—Pulse 120; pain of loins returns occasionally, extending along the course of the ureter, with numbness of the thigh, which extends to the knee; felt much relief from the bath; only one stool since yesterday morning.

28th.—Pain returned this morning, extending round the course of the ureter, with retraction of the testicles; has pain also along the right thigh to the knee. On getting out of bed this morning, fell, being unable to support an erect position; has had two stools since last night, but has passed no urine since noon yesterday; fulness of the hypogastrium; pulse 120, small; anxiety.

March 1st.—Pulse 108; skin and tongue moist; several stools during the night; slept little; has passed no urine since last night; can stand to-day, but complains of numbness down each thigh, extending to the knees.

March 2d.—Blood drawn last night cupped; pulse 120, easily compressible; has had no stool, or passed any urine, since the use of the bath last night; passed a quiet night, with some sleep and freedom from pain.

3d.—Two stools during the night; has passed his urine without the catheter; pulse 114, soft; feels free from pain; coughed once or twice during the night.

March 4th.—Has had three fluid evacuations since last evening, and passed about three pints of urine; pulse 128, small; perspired much during the night; left cheek flushed; complains that he had a return of pain of the back, and numbness of the thighs to the knees; cough more frequent; thirst and dyspnœa.

5th.—Blister rose well; slept a little during the night; expectorates with ease; general moisture of skin; pulse 124, full; tongue moist; dyspnœa lessened; has had one stool, and made water twice; complains of some numbness about the small of his back; ate some toast with his tea this morning.

6th.—Passed a restless night; took his sago and wine frequently; pulse 126, small; general moisture of surface; three stools during the night; has passed about three pints of turbid urine; complains of pain, which he refers to the inferior part of the right hypochondriac region.

7th.—Took his nourishment frequently; mind wandering; passed a restless night; dyspnœa more urgent; pulse at wrist imperceptible; moribund. Died at 12, *a. m.*

Appearances on Dissection.—On opening the cavity of the chest, extensive adhesion had taken place between the pulmonary and costal pleuræ of the right side, by effusion of a quantity of coagulated lymph disposed in sacculi, soft and lacerable, as if recently effused. In the cavity of the abdomen, the liver was found unusually large, but without marks of organic disease. The cellular texture surrounding the right kidney was highly vascular; and, in the substance of this kidney, were two spots of purulent matter, each about the size of a small pea. At the inferior part of the lower dorsal vertebræ, on the right side, an abscess about the size of a walnut was discovered, of recent formation. A still smaller abscess was found in the same situation on the left side. On sawing through the vertebræ to expose the spinal cord, the theca was found covered by a multitude of red vessels; it was much thickened, and dotted with purulent matter on its surface. On opening the sheath, the same degree of vascularity was evident on the cord, the vessels being turgid and tortuous, but seemingly no disorganization of the substance of the cord. The preparation has been transmitted to the collection of morbid anatomy of Chatham.

When this patient was first brought to Hospital, the great anxiety and paleness of countenance, indicative of bodily suffering, induced me to make instant inquiries of the sergeant-major, whether his complaints were of long continuance, or

whether he had been engaged in some act of intemperance the preceding evening. In answer to these inquiries I was informed, that he continued in the performance of his duty until the night previous to his admission into Hospital. I was indeed undecided whether his complaints were to be referred to acute rheumatism, inflammation and abscess of the loins, or inflammation of the kidney. The obstinacy of the local uneasiness, without being affected by external pressure, and the continuance of general fever, notwithstanding the active employment of antiphlogistic remedies, showed in a short time that it was not to the first of these affections that the symptoms were to be ascribed; but, previous to the 28th of February, the third day after admission, and perhaps the eighth or ninth day of the disease, the phenomena which Hopkins presented were not sufficiently pathognomonic to determine the precise seat of the disorder. At this time, however, the return of local pain, and its extension in the course of the ureter, with retraction of the testicle and retention of urine, indicated disease either of the kidney or ureter; while another symptom, his falling from the erect position on getting out of bed, denoting either fainting from loss of blood, or loss of power in the muscles of the lower extremities. The eduction of the urine by the catheter, from the 28th February to the 3d March, showed that the secretion had not been suspended, and that it was retained in the bladder in consequence of want of expelling power. On the following day, March 4th, when this had disappeared, a different symptom took place, viz. numbness of the back, thighs, and knees, and continued till his death, on the 7th. But although this variation in the symptoms certainly led me to doubt whether the only cause was inflammation of the kidney, they were so obscure and ambiguous, in consequence, perhaps, of being complicated with other affections, that it was difficult to form a decided opinion, and thus might have remained involved in obscurity, had dissection not afforded a most satisfactory explanation. We learnt from this, that two morbid actions, inflammation and suppuration of the kidney, and inflammation of a considerable portion of the spinal cord, had existed at the same time, and had thus, in some degree, concurred to produce the unusual combination of symptoms which took place. Another useful conclusion however is, that a considerable portion of the spinal cord may be inflamed without giving rise to very obvious signs. The practitioner, whenever pain is referable to any part of the spinal cord, should use every means to counteract the disease. In the present case, the only signs of the affection consisted in the loss of muscular power in the extremities and bladder on the 28th February, and the numbness of the back, &c. on the 4th March; yet the bladder recovered the power

very nearly at the time when the numbness appeared; and many of the other phenomena might have arisen from a concretion sticking in the ureter. Notwithstanding this obscurity, it is interesting to remark, that the symptom of numbness corresponds accurately with the conclusions derived from some recent experiments on the function of the anterior and posterior bundles of the spinal nerves. It is well known that Magendie has shown, that the anterior spinal nerves are connected with muscular organs, and subservient to motion, while the posterior are connected to the skin, and subservient to cutaneous sensation. Now the examination of the spinal cord showed, that though the sheath, and the cellular substance between it and the inside of the vertebræ, was most inflamed at its anterior part, the enlarged blood-vessels exercise most pressure at the posterior and lateral parts; a circumstance which explains at once the trifling affection of the locomotive organs, and the numbness of the back especially.

With the view of obtaining information on the probable cause of this combination of disease, I have, since the death of Hopkins, made some inquiries about his previous history, and have learnt from his comrades that he frequently spoke of pain in the back, though it never appeared to have been so severe as to lead him to complain of it to me. In the cavalry service, there are various causes which may excite similar disease in the persons of those otherwise predisposed, and especially among young subjects, who have not attained the maturity of growth and strength. Among these may be enumerated the practice of hard trotting without stirrups, a system of drill necessary to make a good horseman, great exertion of the lumbar muscles in the sword exercise, which requires the twofold object of retaining the seat in various movements, and at the same time wielding arms of considerable weight. If these conclusions be well founded, they show the necessity of attending to the earliest symptoms of uneasiness in young dragoons, and in every fatal case which may be even moderately suspicious, of examining the state not only of the spinal cord, but of every part which is likely to be affected by injury in unusual efforts.

Notwithstanding the obscurity of the exact seat of this disease, its inflammatory nature was sufficiently manifest; and I had, therefore, no doubt about the kind of treatment, and the extent to which it was requisite to carry it. The only circumstance, perhaps, which can with any justice be said to have been less rigorously enforced than I could have wished, was the local detraction of blood; for the general bleedings were carried as far as was consistent with the powers of the patient. Hopkins, indeed, was cupped on the 28th; but had it been repeated, or its effect favoured by the application of twelve or eighteen

leeches, at two or three separate times, the progress of the disease might have been arrested, or its violence moderated. It may be doubted, however, whether this would have prevented the fatal termination. His death seems to have been occasioned partly by general exhaustion, partly by the disease of the lungs, and, perhaps, by the morbid action being considerably advanced before it led him to apply for relief.

Medical and Philosophical Intelligence.

Anatomical, Physiological, and Pathological Considerations on the Uvula. By J. Lisfranc.

(From the London Medical and Physical Journal for December, 1823.)

The object of M. Lisfranc in this Essay is to call the attention of practitioners, in a more especial manner than has hitherto been done, to the structure and functions of the uvula. The dimensions of this musculo-membranous prolongation, as the author denominates it, are extremely variable in different individuals: some instances are recorded in which it has consisted merely of a short tubercle; and one is mentioned by M. Lisfranc, in which it was of the ordinary length, but as fine as a thread; yet in neither case was the voice at all altered. In the "Ephemerides des Curieux de la Nature," an instance is mentioned of a girl, who had been deprived of the uvula from the period of birth, and yet no change of voice took place. In other examples this organ has been bifid, without the existence of hare-lip or division of the palate. The uvula is wanting in all the lower animals, although the rudiments may be seen in some, particularly of the monkey tribe.

What are the functions of this organ? Does it assist in the formation of the voice, and the articulation of sound? This idea would seem to be contradicted by the many instances in which the uvula has been removed without the voice being affected; and a case is related by the author, which appears conclusive on this subject. "It is well known (says he,) to many medical men that venereal sores destroyed the epiglottis, the pillars of the arch of the palate, and the uvula, in one of the most distinguished performers on the lyric scene, and that his voice lost nothing in the flexibility or clearness of its tone." The author agrees with M. Richerand, that the uvula serves to give notice to the pharynx of the arrival of food; but that is not its sole office. He continues: "When we wish to transmit to the pharynx the humours secreted by the schneiderian membrane,

we close the mouth, we open the anterior fauces, and introduce the largest possible quantity of air into the nasal cavity; the air must pass through this part with difficulty, in order that it may be applied to its sides with greater force, and clear them more effectually. In order to effect this, the arch of the palate is carried upwards and forwards; the uvula in the natural state follows this movement: situated on the median line, like the larynx, it forms a kind of projection to the right and left of the foreign bodies, which would fall into the cavity of that organ. This musculo-membranous part of the arch of the palate serves, therefore, the additional purpose of preventing the mucus of the nostrils from penetrating into the larynx: nature, besides, has disposed the arch of the palate in such a manner as to form two lateral gutters."

Various proofs are advanced in illustration of this. First, it is only necessary to place ourselves before a looking-glass, and to open the mouth, taking in a deep breath at the same time, in order to see the arch of the palate and the uvula perform the movements here indicated. Secondly, the rudiment of this organ possessed by different animals is proportionally more distinct as they have the head less frequently inclined towards the earth, and as they approach the human species; thus, in the red orang-outang, the organization of which most resembles ours, the uvula is almost complete; while in some kinds of monkey, of remote resemblance to the human species, scarcely any traces of it are to be found. Besides, in those animals whose conformation gives ready vent to the nasal secretions, the arch of the palate extends still farther into the pharynx than in man. Thirdly, it is observed by the author, that, when the uvula is in a state of complete relaxation, and when it has been entirely removed, the mucus from the nares falling into the posterior fauces is apt to get into the glottis, unless the respiration is performed with considerable slowness and precaution.

It sometimes happens that the uvula remains in a state of undue relaxation, as a consequence of a violent quinsy, resisting the usual application of astringent gargles and similar remedies. Among other things, the author recommends the application of pepper, or powdered ginger, carried to the part in a small spoon. We have been informed by a surgeon of experience, that he has frequently succeeded in removing this relaxed state by touching the part with a hair-pencil dipped in the tincture of capsicum; a method certainly of much more ready application than that of M. Lisfranc. Various inconveniences are apt to arise from elongation of the uvula,—such as attacks of inflammation; irritation giving a constant tendency to swallow, and sometimes producing a frequent cough. This last effect has been particularly noticed by Dr. Physick in Philadelphia, as

being mistaken for phthisis pulmonalis, (a circumstance which we mentioned in the "Intelligence" of a former number;) and we have had occasion ourselves to know a case of this kind, which was treated for several months as consumption, and ultimately cured by an operation.* This, indeed, is frequently not merely the best, but the only means, by which the evil can be remedied. With respect to the manner in which this may be best effected, M. Lisfranc speaks as follows:

"Almost all authors advise us only to remove half of the uvula, when its diseased state does not extend too far: I have observed that, under this plan, the part swells and becomes elongated anew, so as almost always to require excision a second time. I believe, after a great many observations, that it is preferable to remove it completely at once. We have already shown that the voice and speech experience no change: it is, then, erroneously asserted, in the "Dictionnaire des Sciences Medicales," that the uvula concurs in the formation of certain sounds, particularly of the letter R, and that articulation is lost when this part is removed. All physicians are convinced that Aphrodiseus abused the public confidence, when, under Antoninus and Severus, he rendered himself famous by endeavouring to inspire a dread of fatal phthisis following as a consequence of extirpating the uvula at its root. Experience has proved to me that the operation, thus practised, has only the slight inconvenience of allowing the nasal mucus to fall more readily into the larynx: now this cannot be put into the scale against the risk of a second operation.

"Many methods of performing this operation have been proposed; we shall briefly relate them. Hippocrates says, that it is necessary to turn up the uvula with the finger, and cut off the point. Celsus seized the organ with a forceps, and *removed as much as he thought necessary.* Fabricius ab Aquapendente preferred the scissors alone: he says, that one hand is thus at liberty, and that he is thus able to manage the tongue and lower jaw. This author applied a spoon heated, but not incandescent, to the wound, in order to close the tissues, and perhaps to stop the bleeding. When the size of the uvula gives reason to apprehend this occurrence, Paré prefers the ligature. * * * Arnaud asserts, that in some cases the uvula becomes so hard as to resist the scissors and the ligature; while he adds, that the bistoury would be attended with danger. He contrived an instrument, consisting of a blade and sheath, the extremity of the latter being pierced with a circular aperture, for the purpose of engaging the uvula perpendicularly; when it is introduced, the instrument touches and lifts up the arch of the palate; the thumb is then placed on the handle of the blade, which is to be pressed with some force, and the organ is thus divided at a single incision. Heister has given an engraving of an instrument invented by a Norwegian peasant. Read improved this: it is composed of two sides, united at one end by a transverse part; their corresponding faces are grooved, so as to admit a knife

* See also our "Intelligence" for the present Number.

which glides between them; the portion to be removed is fixed between the sides of the instrument, at its extremity, and the blade pushed upon it.

"Sabatier made use of a small polypus forceps, bent as scissors. Some have employed these bent into a semicircle, that the uvula might not slip from them; while others have invented straight scissors, having a narrow guard attached to the point of one of the blades. * *

"The ligature has the great inconvenience of giving intolerable pain, and frequently exciting violent inflammation, and is now abandoned. In the only example in which I have seen it used, the patient could not bear it. The instrument of Arnaud, and that of the peasant of Norway, are means which modern surgery no longer employs. If the organ be much indurated, it may be cut with the large scissors of M. Dubois. A cartilaginous uvula, which fell under my observation, did not resist these. * * * Whatever scissors be employed, the point must be blunt; those having the blades curved render it more difficult for the body placed between them to escape, and therefore they deserve the preference; and we think, besides, with Sabatier, that the part ought to be laid hold of with a small forceps. Notwithstanding this precaution, however, it sometimes happens that the organ, if excessively soft, is not cut through at one stroke. This arises from the root of the tongue preventing the instrument from being carried sufficiently far back. I propose, after having pulled the uvula forward, to turn it towards the right side of the mouth: thus the scissors may be placed almost transversely, and the diseased part will be engaged in the instrument almost at its joint, and it is impossible but that it must be immediately and completely removed. This plan has always succeeded with me. In some cases excision of the uvula is not painful, but in others the patients suffer a great deal. * * * When the uvula has been removed by operation, the surgeon must guard against inflammation: for which purpose astringents or emollients are to be employed, according to the indications. These attacks are generally too much neglected after the operation, and it is not astonishing to find hoarseness of the voice sometimes remaining permanent."*

Case of Elongation of the Uvula, producing Symptoms of Chronic Pneumonia.—Madame G—, aged thirty, born of healthy parents, had suffered no severe illness from her infancy, when, in the month of January, 1822, she became affected with slight cough, to which she at first paid little attention, attributing it to the dampness of the atmosphere and her exposure to cold. This lady was the mother of two children, who were exempt from disease, although of a scrofulous constitution. Nothing announced a predisposition to chronic disease of the respiratory organs: nevertheless, her cough gradually increased till the month of April, when her ordinary medical attendant was consulted. He prescribed various pectoral remedies, without avail: the cough made new progress, and in the month of August, Madame G. was sup-

* See the following article.

posed to be affected with chronic inflammation of the lungs, accompanied with tubercles already developed. Various active means were had recourse to, calculated to retard the progress of the disorganization.

M. Cuynat was called in on the 20th of December, 1822, when he observed the following symptoms:—the respiration was constrained, and there existed considerable constriction of the chest; within the cavity of which were felt sharp flying pains, which were increased during the cough and full inspiration. The patient made continual efforts either to swallow or to expel the mucus of the throat; a fixed pain, accompanied with tickling, existed in the larynx; the appetite was almost gone; the tongue was sometimes white, and sometimes natural; the countenance pale; emaciation extreme. The languor both of body and mind of Madame G. seemed to announce the profound lesion of some important organ. The chest, however, examined with much care, was sufficiently sonorous at every part, except the upper, where the sound appeared rather dull. The pulse was sometimes small and unequal, and at others full and frequent; it often passed from one of these states to the other in the space of half an hour. Having examined the fauces, M. Cuynat observed that the uvula was elongated, and rested on the root of the tongue, being the seat of a serous enlargement; and he conceived that all the evils experienced by the patient arose from this cause. He discontinued the use of all internal remedies, and proposed the removal of the superabundant portion of the uvula, as the only means of getting rid of the symptoms. This being agreed upon, the operation was performed on the following day.

The patient was seated opposite a window, with the head supported against the chest of an assistant, and the jaws were kept apart by a roll of linen placed between the molar teeth. The operator then laid hold of the uvula with a pincers, and, pulling it gently, cut off a sufficiently large portion with a blunt-pointed bistoury. No considerable bleeding followed the operation, which was attended with little pain; and the wound was healed under the use of a gargle made of wine and honey, which restored its natural tone to the velum of the palate. The lady entirely recovered.—*Revue Medicale*, September.

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Obliteration of the Œsophagus, in consequence of Inflammation.—A young man, aged twenty-four years, was admitted into the Hôtel Dieu at Lyons, having swallowed a glass of aquafortis two years previously. He escaped from the first symptoms, which were violent, but a degree of inflammation remained in the pharynx and œsophagus, which prevented him for a long time from being able to swallow any thing except a little milk and water. The power of swallowing was afterwards lost, and the fluid could only be carried into the stomach by means of a hollow bougie; a still more complete stricture of the œsophagus did not permit even the sound to pass. In this state the patient presented himself to M. Dupuy, on the 18th of May, 1822. The impossibility of introducing food into the stomach induced him to have recourse to nutritive enemata made of soup. The unfortunate patient, tormented by hunger which could not be appeased, was

wretchedly emaciated, and affected with violent fever: his eyes were sunk, his tongue red, his belly retracted, and he had continual hiccough. At last, on the 28th, he died of inanition, in the most acute anguish. On opening the body, the œsophagus was found completely obliterated for four inches at its inferior extremity; the stomach was slightly inflamed.—It is suggested that, if it had been possible to have left the sound in the œsophagus, the power of introducing nourishment might have been retained, and the life of the patient prolonged. —*Bulletins de la Société Medicale d'Emulation de Paris*, Juin, 1823.

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Doctrines of M. LALLEMAND *with respect to Softening of the Brain.* —1st. There exists resemblances, passing into each other by insensible shades, between the most simple vascular injection of the brain and its membranes, and the most complete apoplexy, (*jusqu'a l'apoplexie foudroyante.*)

2d. The softening of the brain, a disease but little known before the writings of M. Lallemand appeared, has its seat peculiarly where extravasations of blood are most frequent; for example, in the corpus striatum.

3d. The affection results from preceding inflammation. This appears to be proved, according to M. Lallemand, by the red circle,—by the injection of blood, or the infiltration of pus, which surround the softened portions,—by the causes which have operated,—and by the symptoms of irritation which show themselves in the first instance.

4th. M. Lallemand appears at first to have limited his remarks on softening as a result of inflammation to the brain, but since then his ideas have extended, and he now attributes softening of all the tissues to the same cause. He has shown that, although the inflamed organs are hard and very dense, yet their tissue has in truth but little resistance, and that the slightest force disunites their texture.

5th. The softening sometimes precedes apoplexy, and sometimes follows it: it is sometimes the cause, and sometimes the effect; but in every case it is the product of inflammation.

6th. Apoplexy is preceded by softening of the brain, as all hemorrhages by the inflammatory irritation of the tissues where they occur. It is correct to say that hemorrhagy often proves abortive, (*l'hemorrhogie avorte,*) and then there is only inflammation for the organs: that is to say, softening of the brain, in the case under consideration.

7th. If the softening of the brain affects the grey substance more frequently than the cuticle, it arises from the former having a more extended surface, from its receiving larger and more numerous blood-vessels, and likewise from the arachnoid which surrounds it often communicating the inflammation by which it is affected.

8th. In apoplexy there is sudden paralysis, but in inflammation of the arachnoid there are convulsions; and afterwards palsy, when the brain becomes inflamed.

9th. The following are the circumstances which generally occur in apoplexy: at first there is hemicrania, head-aches, giddiness; then pains, prickings, and cramps; creeping in the limbs next come on; and then melancholy and moroseness. It is then that inflammation

of the brain exists. If symptoms of palsy appear, softening of the organ may be suspected. Finally, if a deposition of blood takes place in the brain, then the paralysis is complete, and the apoplexy evident. After some time, if the attack has been slight, fresh pains come on, which are the signs of a new inflammation developed around the effused clot: it is this same inflammation which hastens the re-absorption of the blood and the formation of a cicatrix, and which likewise may occasion a fresh attack, by the softening which it produces.

10th. Delirium and convulsions announce inflammation of the arachnoid membrane; while drowsiness, coma, and paralysis, denote inflammation of the brain.

11th. The palsy of softening may not be preceded by inflammatory symptoms; but then it is always more gentle than the palsy caused by apoplexy.

12th. Every time that the brain becomes diseased when it is exposed and in contact with the atmospheric air, it swells, and a fungus protrudes through the cranium: this is an effect of the movements and inflammatory action of the brain. After death, in place of a fungus, we only find a fissure—a large cavity.

13th. If, in the case of inflammation of the brain, there be no external wound, then the affected part of one hemisphere compresses the neighbouring parts of the opposite side: hence arise the drowsiness, coma, and loss of sense,—deafness and blindness. If there be an external opening, then the palsy and loss of sense only happen on the side opposite the inflammation; but consciousness is retained, because the integrity of a single hemisphere suffices for the exercise of the intellect.

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Amenorrhœa treated by Injecting a Solution of Ammonia.—The following extract we give, without comment, from a paper by Francois Lavagna, of whom we know nothing further than that he is a doctor in medicine, and a correspondent of the "Journal Universel des Sciences Medicales."

"There is no physician who does not frequently, in the course of his practice, however limited, see young girls, about the age of puberty, who are pale, languishing, and irregular with respect to menstruation, recover their ruddiness, and assume new vigour, under the influence of periodical evacuations of the catemenia supervening upon marriage. This fact had induced me to think that any method capable of determining a flow of blood towards the uterine system, would be as well calculated as coition to effect a return of the menses, when suppressed or retarded; when I conceived the resolution of making some experiments on this subject with ammonia. This medicine, of which the stimulation is very transitory, when it is suspended in luke-warm milk, or in any other liquid, ought to be injected into the cavity of the uterus, or at least into the vagina, in sufficient quantity to excite in these parts the orgasm which the act of generation produces in them, (*a une dose suffisante pour exciter, dans ces parties, l'orgasme que produisent en elles l'acte generateur!*)"

Various cases are detailed in which the remedy, thus employed,

proved successful; and the author gravely informs us, that the young ladies thought the excitement thus produced "*une sensation desagreable.*"—*Journal Universel des Sciences Medicales, 93 Cahier.*

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Chlorine, with Water, employed in the Treatment of Scarlatina.—Dr. Braun, who details the advantages of this remedy, carries his enthusiasm so far as to call it a specific in scarlet fever. During ten years he has employed it successfully in the most complicated cases. Chlorine mixed with water, he says, destroys contagion; and the cure is seldom followed by any consecutive disease. He gives this medicine in the dose of a tea-spoonful every two or three hours, to children from three to six years of age, and, to those of a more advanced age, a table-spoonful in the same intervals. It is given without the addition of any other medium, as the chlorine is decomposed in most mixtures. It should be swallowed quickly, lest it should produce cough. M. Braun observes, that, in the sore-throat, which often accompanies the scarlet fever, this water is more easily swallowed even than mucilaginous drinks. As soon as the disease begins to decline, he only prescribes the medicine in the dose of one or two spoonsful in the day. The whole quantity taken during the disease has never exceeded two ounces in the cases of children, and four or five ounces in those of adults. If this medicine is given in greater doses, it brings on vomiting and frequent alvine evacuations: if it is not fresh, or has been exposed to the atmospheric air, it produces slight excoriations of the lips. M. Hufeland had already recommended this remedy in nervous and typhus fevers.—*Revue Medicale*, Juillet.

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Abortion induced by thrusting a Seton-needle into the Uterus.—M. Crouzit was called, in 18—, to a girl, who was pregnant and laboured under uterine hemorrhage. Various measures had been employed without the *desired* effect; when, at length, recourse was had to the introduction of a seton-needle into the uterus. The instrument was thrust in so far that it became impossible to retain the hold of it, and, of course, it could not be withdrawn. The imprudent operator quieted the apprehensions of his patient, by assuring her that it would come away with the fœtus,—and disappeared. When M. Crouzit arrived, the ovum had been expelled, and appeared about three months old, but the after-birth was retained. It was impossible to ascertain the exact situation of the needle; nor could the placenta be removed, in consequence of the contraction of the neck of the uterus: on examining through the parietes of the abdomen, the surgeon thought he could discover the foreign body. After two days the secundines came away without the needle, and it seemed probable that, being introduced by its sharp end, this instrument had pierced through the uterus during its contraction, and successively traversed various parts, as it was not until eleven days after the event that the patient began to experience pain in the groin. On the thirty-fifth day, an elevated point was perceived in this situation, and the pain became very acute. On the seventy-ninth day, the instrument was withdrawn, by the patient herself, from this part. It proved to be a seton-needle,—a sty-

let of silver, six inches (French) in length, buttoned at one extremity, and sharp at the other. The wound speedily closed, and no inconvenience was experienced from the occurrence!

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Economical Method of making Prussic Acid.—M. Pessina, of Milan, gives the following process for the formation of the prussic acid, which he states to be by much the most economical hitherto discovered.—Eighteen parts of the prussiate of iron and potass are to be reduced to fine powder, and introduced into the bulb of a small tubulated retort of glass, to which a small balloon, likewise tubulated, is then to be attached. A conducting tube dips into a flask containing a small quantity of distilled water. A *cold* mixture, of nine parts of sulphuric acid, with twelve of water, is next introduced into the retort, which is closed, and the whole left for twelve hours; the balloon, and the neck of the retort, being kept cool with ice and evaporating cloths. A gentle heat is then applied, and continued until the striæ in the neck of the retort become more rare, and a blue substance rises, as if it would pass into the receiver. The heat is now to be withdrawn, and the apparatus allowed to cool; the contents of the receiver being preserved in the proper vessel. The prussic acid thus obtained is stated to be pure, and the specific gravity about 0.898.—*Giornale di Fisica.*

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On the Metamorphosis of certain Species of Confervæ.—At a late meeting of the Royal Academy of Sciences, MM. Bosc, Dumeril, and Savigny, made a Report on a Memoir presented by M. Gaillon, the subject of which is the Metamorphosis of certain Species of Confervæ into inferior Animals. Many naturalists, and lately M. Berg de St. Vincent, have stated that a great number of the confervæ become disorganized during the summer, and the greenish globules seen in their inside become animalculæ, which swim for some time in water, are capable of being irritated by the touch, and terminate their career by again forming fresh confervæ. These singular beings alternately destroy, in a remarkable and unequivocal manner, the feeble limits established between the two kingdoms. M. Gaillon presents some facts in his memoir which are perfectly in accordance with those already known. The species of conferva which he has particularly examined belongs to the genus *Ceromion* of De Candolle. Delwyn has described and represented it under the name of *conferva comoides*; it covers the border of the sea at Dieppe. During a whole year M. Gaillon has observed, at certain times, greenish, egg-shaped, little bodies detach themselves spontaneously from the filaments of the *conferva comoides*, advancing sometimes rapidly, sometimes slowly,—changing their direction,—in fact, acting in the same manner as the Euchelier, the Cyclides, and the other infusory animals of Muller. Taking the entire filament, he has forced these animalculæ to detach themselves before their time, and has observed the same phenomena. M. Gaillon supports his opinion by the authority of M. Berg de St. Vincent, and also of M. Mertans, the celebrated German botanist, who writes that he is not surprised at their observations, having for a long time conceived the same idea. Last year (he says,) I showed to a number of

scavans the *conferva mutablis*, which, on the 3d of August, resolved itself into molecules,—which on the 5th were endowed with motion,—on the 6th were reunited in the form of a simple articulation,—and resumed, on the 11th, its primitive form.—(*Archives Gen.* Sept.)

In an early Number of the "Philosophical Magazine," there is an account of some microscopic observations, made by M. COQUEBERT, on the *conferva jugalis;* by which it appears that the male and female filaments actually unite,—that certain globules contained in the male filaments actually pass into the interior of the female filaments,—and that, by this union, there are formed in the latter seeds, or ova, which reproduce the species.

On the Direct Passage of Substances into the Blood. (*Journal Complementaire, &c., Septembre*, 1823. xvi. 235.)—Although the frequently repeated experiments of Flandrin, Magendie, Mayer, Gmelin and Tiedemann, leave little doubt as to the direct passage of many substances into the venous system, it gives us additional pleasure to notice a farther confirmation of them by a skilful physiologist, M. Westrumb of Hamelin. His experiments are the following. The sulphuretted hydrocyanate of potass, indigo, rhubarb, oil of turpentine, were injected into the stomachs of dogs and sheep; and after various intervals of time, the animals were killed and carefully examined. When a mixture of indigo and oil of turpentine had been used, and the animal was killed 5 hours after the beginning of the experiment, the two substances were plainly manifested to the sight and smell in the whole track of the intestines, as well as in the blood of the vena portæ, in the substance of the lungs, liver and kidney, and in the urine; but not a vestige could be recognised in the glands of the mesentery, or in the chyle. The oil of turpentine and the hydrocyanate of potass were given to a sheep in repeated doses during four days, and it was killed half an hour after the last dose. Neither of these easily detected substances could be found in the lymphatic vessels or glands of the mesentery, or in the thoracic duct; but both of them were very obvious in the liver, kidney, spleen, and blood of the vena portæ. Similar results were obtained with the decoction of rhubarb, and the sulphuretted hydrocyanate of potass. Tying the thoracic duct near its termination did not alter the phenomena. The researches of Westrumb likewise confirm those of former experimenters as to the extreme rapidity of the venous absorption. He detected rhubarb in his own urine five minutes after swallowing an ounce of its infusion; and after the same period in rabbits, but not earlier. Half a grain of the hydrocyanate of potass given to a little dog, became sensible in the urine *at the end of two minutes.*

On the Influence of the Nervous System over the Secretion of Urine. (*Ibidem*, p. 225.)—The same physiologist has supplied some curious facts on the share which the nervous system possesses in the secretion of urine; and he infers from them, that without the assistance of the nervous fluid, this secretion does not take place at all. After severing the spinal column from the brain, betwixt the skull and first vertebra in a rabbit, he injected into the stomach a dram of

hydrocyanate of potass dissolved in water; and proceeded to maintain the action of the head by artificial respiration. The temperature which, from being 108¼ Fah. before the division of the spine, had fallen to 97¼, rose gradually in 15 minutes to 103, and then gradually fell to 82¼. The insufflation was then discontinued, viz. an hour after it was begun, and the organs were carefully examined. The trito-sulphate of iron detected the presence of the hydrocyanate in the serum of the aortal blood, and that of the vena portæ, in the respiratory mucous membrane, in the substance of the liver, spleen, lungs, *and in that of the kidneys; but not a trace was perceptible in the urine, of which the bladder contained only a few clear limpid drops.* This experiment was repeated upon a dog; but two ounces of the hydrocyanate were given. The substance of the kidneys acquired a beautiful greenish-blue colour with the ferruginous test; the bladder, which the experimenter had forgot to empty at the beginning of the experiment, contained a large quantity of urine without a vestige of the hydrocyanate; at the same time that salt existed abundantly in the blood-vessels of the pelvis.

These are certainly powerful facts, for no substance passes in ordinary circumstances so rapidly into the urine; we have already seen, that it may be detected there two minutes after being swallowed. They are also confirmed by the results of a set of experiments even more interesting, performed in 1820, by a German physiologist, M. Krimer. This gentleman observed a total suppression of urine after the division of the spinal cord; and when only the renal nerves were divided, he found that the urine yielded much less urea, uric acid, phosphates or hydrochlorates, and no rhubarb (which had been previously swallowed), but a much larger quantity of albumen. It is also a singularly interesting fact (which must recal to our readers the ingenious researches of our countryman, Wilson Philip), that by means of a current of galvanism, the passage of substances into the urine, which had been interrupted by the division of the parvagum, is completely re-established. M. Krimer divided both of these nerves in the dog, emptied the bladder, and injected a decoction of rhubarb into the stomach. The urine repeatedly examined with caustic potass, gave no indication of the presence of rhubarb. Three days afterwards, he gave the animal a fresh quantity of rhubarb, and connected the lower ends of the two divided nerves with a small voltaïc pile; in a short time the presence of rhubarb in the urine was distinctly detected; and on interrupting the galvanic current, it again speedily disappeared. These experiments of Krimer are contained in a work entitled *Physiologische Untersuchungen*, or Physiological Researches, published at Leipsick in 1820.

Inflammation of the Tongue cured by Incisions. (*Journal Universel, &c., Juin*, 1823. xxx. 367.)—A stout young woman, after exposure to cold, experienced a considerable diminution of the menstrual discharge; and not long afterwards was attacked with severe pain of the throat, impeding deglutition and the movements of the tongue. The tongue then began to swell, and soon became so voluminous, as to block up the fauces, project out of the mouth, press

down the lower jaw, and cause a distressing sense of approaching suffocation. At the commencement of the disease, irritating clysters were given, leeches were applied to the vulva, and blood drawn from the feet, but in vain. At last her attendant had recourse to the expedient of making two deep incisions from the base to the tip of the tongue. A few hours afterwards, the swelling had abated so considerably, that the woman was able to close the jaw. The tartrate of potass and antimony was then prescribed, even so as to produce vomiting; her state continued rapidly to improve, and she was completely well on the eighth day. This severe practice has been resorted to by many practitioners in similar circumstances, and almost invariably with success. The author of the paper from which we have extracted the foregoing notice, refers the reader in particular, to a treatise on the subject, in the 5th volume of the *Mémoires de l'Académie de Chirurgie*, by De Lamalle, who professes to have derived it from Job-a-Meekren, a well-known Dutch surgeon of the 17th century.

On the Use of the Sulphate of Kina in Intermittent Fever. (*Giornale Arcadico di Scienze, &c. Novembre*, 1822. xlvii. 129.)—The following statement by De Rossi of Anani, and Tonelli, a physician at Paliano, is derived from the most precise and extensive experiments yet published on this subject. Both of them have made up a set of admirable tables, from which we have deduced the subsequent particulars. De Rossi used the sulphate of kina in 64 cases, namely in 8 simple tertians, 29 double tertians, 2 simple quartans, 17 subcontinued, and 8 pernicious intermittents. *All of these were cured; 50 had no subsequent paroxysm, 7 had only one very slight fit, 5 two similar fits, 1 several fits, and 1 passed into a continued remittent fever.* One person affected with a quartan for 12 months, recovered after a single slight return of the paroxysm. The quantity of the salt used varied between 12 and 72 grains; and in 45 cases did not exceed 24. The remedy was given in pills, and always in the apyretic intervals, in doses of four grains every hour, or every alternate hour; and, in general, to confirm the cure, 4 grains were given daily for 10 days after the last paroxysm. The principal advantages to be derived from it, in preference to the bark itself, are the following:—It may easily be given to children, and to those who have a disgust at bark, or are affected by it idiosyncratically; and it has a rapidity of effect, especially in pernicious and subcontinued intermittents, far surpassing that of the bark. He farther proves, that large doses produce no bad consequences; in other words, that it can never act poisonously; that it may be given safely to persons of all ages and temperaments, to puerperal, pregnant and menstruating females; and that, when it fails, the failure is owing either to the existence of some other morbid cause, or to the sulphuric acid being present in excess, or to the salt being decomposed by pharmaceutic substances intermingled, or by other matters which it encounters in the alimentary canal. The observations of Tonelli are equally pointed. He used it in 65 cases, namely in 4 quotidians, 22 simple tertians, 31 double tertians, 3 simple quartans, 2 double quartans, 2 subcontinued, and 1 pernicious in-

termittent. All of them recovered, except the last, who would not take the remedy till he was insensible, and near the point of death. Forty-two recovered without any return of the fit; of the 65 cases only 43 required a repetition of the first dose, which varied from 12 to 18 grains. These results, especially those of De Rossi, who used the salt in greater quantity than Tonelli, and in a greater number of bad intractable cases, place the superiority of the sulphate of Kina beyond all doubt, both as to convenience and efficacy.

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Application of Galvanism to the Extraction of Urinary Calculi. (*Annales de Chimie et de Physique, Juin,* 1823. xxiii. 202.)—MM. Prevost and Dumas, the Genevese physiologists, whose ingenious researches on the blood and on urea, we noticed in our last Number, have just published the outline of some experiments they have made, to prove, that the extraction of urinary calculi from the bladder may be facilitated by means of galvanism. They found that when a fusible calculus (ammoniaco-magnesian phosphate) was placed between the extremities of the conductors of a trough containing 120 plates, and was plunged in this state under water, the bases and the acid were gradually transported to the opposite conductors, and there combined anew in the form of a fine powdery precipitate. The process having been continued upwards of 16 hours, a calculus which weighed originally 92 grains became so friable, that the slightest touch broke it down into small crystalline grains, none of them larger than a lentil. They next proved to their satisfaction, that a pair of conductors, protected by some non-conducting substance to within a few lines from their extremities, might be introduced into the bladder of a dog, and connected with a trough of one hundred and thirty-five plates, without occasioning any uneasiness to the animal; although the same apparatus immersed in water decomposed it so rapidly as to furnish a *torrent* of gases. Having thus found that no harm could result from disengaging the galvanic fluid in the bladder, they finally proceeded to introduce the same conductors into the bladder of a middle-sized bitch, but with a forcible calculus fixed between them: the bladder was then distended with water, and the conductors were connected with the galvanic trough. After the calculus had been thus acted on, for an hour twice daily, during six days, it had lost more than an eighth part of its weight and had become so weak and brittle, that it could not be introduced again into the bladder. The animal was killed a few days afterwards, and the bladder was found to be quite free from injury or disease.

These experiments certainly prove that a small fusible calculus, when brought between the conductors of a galvanic battery, undergoes gradual decomposition within the bladder. The authors infer, that all other calculi consisting of compound salts, may be decomposed in the same manner; and they anticipate with considerable confidence the application of their discoveries to the treatment of urinary calculi in man. We have no wish to damp their ardour in these curious investigations. But any one may recognise, that in the list they have annexed of difficulties which remain to be encountered, and which they propose to make inquiries upon, they do not include some of the

most obvious and insurmountable. Farther, as they themselves remark, the projected plan of treatment cannot be applied to calculi of uric acid, which, according to the statements of Mr. Brande, forms the whole or greater part of three-sevenths of the stones analyzed by him.

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Case in which a Tumour was found within the Vena Porta. By M. Honore.—In our 118th Number, Mr. Ward recorded a case in which a tumour was found on dissection within the vena porta. A somewhat similar instance has been detailed in the *Académie Royale de Médecine* of Paris, at their sitting of the 9th of September last, by M. Honoré, and the morbid structure presented to the Academy. This tumour was developed in the substance of the parietes of this vessel, just before it entered the liver. Its size was that of a large nut: it projected entirely into the interior of the vein, and appeared to be developed immediately beneath the internal or serous tunic of the vessel: it offered all the characters of the adipose tissue. The individual in whom it was found was affected with icterus and cancer of the stomach. There was no serous accumulation within the peritoneal cavity, although the vena porta was almost entirely obstructed by this tumour.

Pathologists have generally remarked, that adipose tumours have seldom or ever been found in the cellular texture which unites the different coats of the vascular parietes, whether arterial or venous. They are very rarely found in the cellular tissue, uniting the tunics of the digestive canal, and then only in the sub-mucous texture. A case of this latter description has been mentioned by M. Andral; (see his account of the pathological anatomy of the digestive canal in some of our late numbers;) and the one now recorded by M. Honoré seems to present an analogous character.—*Archives Génér. Sept.* 1823.

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Case of Softening of the Anterior Part of the Medulla Oblongata and Spinal Marrow. By M. Royer-Collard.—M. Royer-Collard, at the August meeting of the Royal Academy of Medicine of Paris, detailed the particulars of a case in which the anterior portion of the spinal marrow was exceedingly softened. The subject of the case had been in a state of mental alienation since 1805. During ten years this man continued in a state of stupidity: his taciturnity was remarkable. His lower extremities were unsteady. About 1816, the abdominal members became more and more feeble, and soon were incapable of executing any kind of motion: they preserved, however, their sensibility unimpaired. The patient sank, in 1823, into a sort of apoplectic state.—*Dissection:* the pia mater of the anterior face of the spinal marrow presented a yellowish colour: the corpora olivaria and pyramidalia, as well as the bundles constituting the anterior part of the spinal cord, were greyish, and as soft as *bouillie*. The anterior roots of the spinal nerves had also experienced a similar softening. The posterior portion of the spinal cord, and the posterior roots of the nerves, were of a healthy appearance. The thalami

optici, and the corpora striata, were also softened, but in a less degree than the marrow.—*Rev. Méd. Sept.* 1823.

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Case of Chronic Hydrocephalus in an Adult Female.—In one of the late Numbers of Hufeland's Journal, the case of a female, aged eighteen years, is detailed, who died of hydrocephalus, under which she had laboured during fifteen years. The dissection of her head presented the cranium almost completely ossified: it was only slightly transparent in the situation of the fontanells. The circumference of her head was twenty-six inches and a half; the antero-posterior diameter was ten inches and a half; the transverse diameter eight and a half; the vertical diameter eight and three-fourths; the oblique diameter thirteen inches and three-fourths; and the whole length of the body was fifty-four inches and a half. Between the brain and its meninges, about twenty ounces of a yellowish fluid were found. The brain itself, in which could no longer be detected the usual anatomical disposition of parts, and which offered more the appearance of a kind of pulpy sac than a natural brain, contained about nine ounces of a similar fluid.

The aqueous accumulation extended also to the spinal column, forming the complication of hydrocephalus with dropsy of the spine. The vertebral column was inspected, and the spinal cord found only to fill half the canal; above two ounces of fluid escaped on opening it. Although the patient had sustained this disease for fifteen years, she enjoyed notwithstanding, until the two last months of her life, all her faculties. Her catamenia were always regular, and even abundant.

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Case of Intus-Susception, followed by the Evacuation, per anum, of about 30 inches of Small Intestine and a Portion of Mesentery. By MM. Bouniol and Rigal, fils.—At a late meeting of the *Académie Royale de Médecine*, M. Larrey read a report, in his name, and in that of MM. Roux and Béclard, on a case under the above title. The individual who was the subject of it had laboured under violent dyspepsia, after which he was attacked with every symptom announcing internal strangulation, such as complete suppression of the alvine evacuations, vomiting of fæcal matter, hiccup, and severe pain of the abdomen, with an elevated tumour, very sensible to the touch, in the right iliac region. At the end of twelve days, after violent pain in the bowels, the portion of intestine above mentioned was evacuated per anum. From this time the patient rapidly improved, a painful sensation in the right iliac region being the only inconvenience remaining. At the end of about three months, this individual, after having eaten a large quantity of cherries, was attacked with symptoms of peritonitis, and died. Permission could not be obtained to open the body. The preparation sent to the *Académie* certainly resembled, in every respect, a portion of intestine and mesentery. M. Larrey supposes, what is indeed the only rational supposition, that a portion of intestine, invaginated, and strangulated, and struck with gangrene, had become separated from the living tissues, and had entered into the great intestine, whence it had been evacuated. By a

successful effort of nature, both ends of the living intestine, coming in contact, had reunited.—*Revue Médicale*, Août, 1823.

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Efficacy of the Chloruret of Lime as a disinfecting Agent.—Messrs. Orfila, Lesueur, Gerdy, and Hennelle, having been requested by the *Procureur du Roy* to examine the body of an individual who was supposed to have been poisoned, and who had been dead for nearly a month, found the smell so insupportable, that they were induced to try the application of the chloruret of lime, as recommended by M. Labarraque in the pamphlet to which we had occasion to refer in our last number. A solution of this substance was frequently sprinkled over the body, and produced quite a marvellous effect; for scarcely had they made a few aspersions, when the unpleasant odour was instantly destroyed, and the operation could be proceeded in with comparative comfort.—*Archives Générales de Medecine*, Août, 1823.

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Vegetable Milk.—Amongst the many interesting vegetable productions which are met with in the equinoctial regions, may be reckoned a tree which abundantly affords a milky juice, similar in its properties to the milk of animals, and is employed for the same purposes, as M. de Humboldt witnessed at the farm of Barbula, where he himself drank of this milky juice. This liquid is derived from the *palo de loche*, or *de vacca*, a tree which grows somewhat abundantly in the mountains above Periquito, situated to the north-east of Maracay, a village to the west of Caracas. This milk possesses the same physical qualities as that of the cow, with this only difference, that it is a little viscous: it has the same taste also as cow's milk. With respect to its chemical properties, they sensibly differ from those of animal milk. The constituent parts of the milk of the *Arbre de la Vache* are—1st, wax; 2d, fibrine; 3d, a little sugar; 4th, a magnesian salt; and 5th, water. The presence, in vegetable milk, of a product which is not commonly met with, except in the secretions of animals, is a surprising fact, which we should not have announced without much circumspection, had not one of our most celebrated chemists, M. Vauquelin, already found *animal* fibrine in the milky juice of the *carica papaya*.—*Gazette de Santé*, Juillet, 1823.

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On the Exhalation of Carbonic Acid during Respiration.—By Dr. Edwards.—This eminent physiologist has communicated to the French Institute the result of numerous experiments which he has made respecting the exhalation of carbonic acid during expiration. He proves that carbonic acid does not form instantaneously in the lungs through the action of the respired air, but that it is secreted from the blood in the respiratory organs. Dr. Edwards placed some cold-blooded animals in perfectly pure hydrogen. The respiration was kept up for several hours as in atmospheric air; and he discovered, after this lapse of time, the presence of a quantity of carbonic acid, nearly equal to that which would have been effected in atmospheric air.—*Revue Médicale*, Août, 1823.

On the Transmission of Contagious Principles from the Lower Animals to the Human Species. By Professor Remur, of Breslau.—One great question in pathology is to ascertain if Hydrophobia and Vaccina are the only maladies which may be transmitted from the lower animals to man; or if a similar transmission may likewise take place in other diseases to which animals are subject; and in the latter case, what are these diseases? In order to solve this question, M. Remur adduces a number of facts, which prove, in a very conclusive manner, that certain other disorders, such as the virulent coryza of horses, the plica of animals covered with hair, the gangrenous inflammation of the spleen, which occurs in cows, &c. may, from immediate contact, be transmitted from the animal to the human species, and there give rise to diseases entirely resembling those which gave them origin.—*Archives Génér. Sept.* 1823.

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A new Remedy for excessive Salivation.—Dr. Kruger-Hausen, of Gostrow, has given an account of a man who, during a state of excessive salivation, attended with hæmorrhage from the gums, had employed the usual astringent gargles without benefit, who afterwards covered his tongue and inside of his mouth and fauces with tar, by means of a brush. He soon afterwards recovered, without any other remedy. Dr. K. has since employed the same means in several cases, with the effect of quickly removing this disagreeable consequence of medical treatment, without any inconvenience resulting from this new method.—*Rev. Méd.* Juillet, 1823.

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Lectures on Medical Jurisprudence. By J. Gordon Smith, M.D.—We have been much surprised that, notwithstanding the great attention that has been devoted to Forensic Medicine by the best writers in our Profession, no regular course of lectures has been given on this branch of medicine for some time. We are happy to find that this desideratum is at length about to be supplied by Dr. Gordon Smith, to whom this department of medical science is chiefly indebted in this country. This able Physician intends to commence his course in the first week of January, 1824, and to continue it till the end of March.

Although the works on medical jurisprudence furnish the student with much information, yet no one who wishes to obtain a comprehensive knowledge of an important branch of professional practice would rest satisfied with that alone. The copious and practical details furnished by a full course of lectures are requisite to the obtaining a satisfactory stock of information in this, as well as in other departments of medicine. There is no school of medicine in Europe, except the London schools, where a proper provision is not made for this study; and we hope the British metropolis will be no longer an exception.

We are happy to understand that Dr. Smith intends not only to teach by precept, but to exemplify, by experiment and demonstration, the solution of the many important problems which are usually referred by tribunals and the administration of a country to medical men. Such modes of instruction, we may venture to assert, will put

the medical practitioner at once in possession of a stock of knowledge equivalent, perhaps even superior, to experience.

Observations on the Chlorurets, and their Application to the Healing Art.—Under this title, M. Labarraque lately read a *Mémoire* before the *Académie de Médecine* of Paris, in which he relates a case of gangrenous carbuncle, the destructive progress of which was so rapid, that the cheek of the little patient was perforated in less than twenty-four hours, so as to offer a loss of substance eighteen or twenty lines in length, and eight or nine in breadth. On the first application of the chloruret of soda, all fœtor ceased, and the cure was completed at the end of eighteen days.

M. Labarraque then refers to the facts mentioned by M. Cullerier, which have been already noticed in this Journal (p. 503), and to a case of ulceration of the uterus, the fœtor of which was completely removed by injections of the chloruret, diluted with fifteen parts of water; after which he alludes to several cases of hospital gangrene, which had yielded to the same application.

M. Labarraque next describes the mode which he has adopted, for the removal of the fœtor in bodies in a state of putrefaction; this consists in adding to 30 or 40 pints (60 or 80 pints English) of water, one pound (15 oz. 6 dr. 1 gr. troy) of chloruret of lime; the mixture must be well shaken, a piece of cloth dipped in it, and quickly spread over the body in putrefaction. In this portion of the *Mémoire*, M. Labarraque establishes the disinfecting power of liquid chloruret of lime over air charged with fœtid emanations; and he is of opinion, that the fumigations of oxymuriatic acid gas may be advantageously replaced, in the wards of hospitals full of sick, by aspersions with water containing 1-200th of its weight of dry chloruret of lime. The communication is concluded by some considerations on putrefaction, and by some views of investigating this part of animal chemistry.—*Journal de Pharmacie.*

Political Medicine.

(From the London Medical Repository for January, 1824.)

In commencing a new department of our Journal under the above head, we are fully satisfied that we offer to its readers an advantage which, in this country, has been hitherto overlooked, and one that we are well assured they will, in the course of our progress, fully appreciate.

By Political Medicine we mean those applications of the medical sciences which are now tolerably well known to the Profession, under the various titles of *Medical Jurisprudence*, *Forensic*, and *Judiciary Medicine*, &c. &c. In assuming this term we do not furnish a new one, for *Medicina Politica* has been long employed; but we apply it (with more precision than it has hitherto been used) to sig-

nify, collectively, the application of medicine, in its most extended sense, to public and national purposes. It has been confounded with *Politia Medica;* between it and which, notwithstanding the similarity of sound and the close relationship as to original derivation and import, there is this palpable distinction, that the latter is but "part and parcel" of the former.

We prefer the term to "State Medicine," which has been also employed, by good authority,* to embrace two of the three departments we purpose to include under the term Political, because we consider it more consonant to the usage of English phraseology, and because we question whether it be not more strictly applicable to the purpose. In a very luminous discourse relative to the subject, published in France,† the term *Médecine Politique* is also preferred, though restricted to the same branches as those included by the English author. It would therefore appear, that if we are to choose a term, already existing, under which we may include the three departments into which our professional studies are unquestionably separable, in relation to social and public interests, we cannot choose so appropriately; and were we to construct a new one, we rather think we should be put to some trouble in the attempt, while we should have to stand the fire of the critic, without even the shelter of precedent or authority.

We shall say no more about the name, however, referring those who may be disposed to stay behind, with a view to argue the point, to writers of systems and manuals on the subject; proceeding, with such of our readers as may be of a more accommodating disposition, to say something about the things signified.

We propose, in this additional department of our new series, so far to exceed our former labours in regard to forensic medicine and its sister relations to jurisprudence and police, as to have a regular article belonging to some of these branches every month, if possible; conveying our own sense of their importance, and (we trust) enlarging that of the Profession; improving their utility, by assigning to them some degree of that prominence, to which they are so justly entitled, and which they are now fast reaching among us.

It is our aim to expand the knowledge of the subject (as far as *our* influence extends) among those who, in their turn, have it in their power to contribute largely to its improvement; and this we purpose to accomplish, not by any retrospective view of the science, as formal disquisitions on its parts and doctrines, but by adverting to passing events illustrative or corrective of what may already exist; by taking up the subject where it now is, and registering, as far as we shall be enabled, facts of a practical nature, discoveries, and improvements, or the progress of the department in whatever way.

For this purpose, we shall assume that our readers have already made themselves acquainted with the nature and bearings of these

* Introductory Lecture of a Course of State Medicine, &c. By John Elliotson, M.D. &c. &c. London, 1821.

† Discours de la Médecine Politique, &c. Par Prunelle. Montpellier, 1814.

sciences, for doing which they are now amply furnished with the means, in the laborious and satisfactory writings of various authors, to which we and our brother journalists have taken pains to introduce them. What we have in view will amount, perhaps, to little more than illustrations of their doctrines and hints; forming, however, a body of instruction little inferior in value. Without the previous advantage of these writings, we could not have entered on such an undertaking—it would have been irksome to ourselves, or unfair to our readers, whom, in case of need, we shall now be able to refer to intelligible and readily accessible sources of information, which it will not be possible or necessary for ourselves to supply.

We propose, then, more particularly, to observe all those political or public proceedings that regard the Medical Profession, whether legislative or judiciary, and to bring them more directly and forcibly before our brethren than might otherwise be the case. Thus, we shall pay strict attention to the trials and inquests on which the evidence of medical men may be sought, or the interests of the Profession depend—pointing out, in these practical examples, the import of testimony, the occurrence of error, and the consequences of what may be said or done, as far as there may be question to matters of science or of medical interest. We shall deduce from them such inferences and instructions, for the benefit of the whole, as may thus be exemplified on the part of individuals, and endeavour to remedy the effects of mistake or misrepresentation. In doing so, we shall never assume to ourselves the unauthorized privilege of undue exposure or imputation; and, knowing the arduous and ungracious nature of the circumstances in which a medical witness is too frequently placed, on such occasions, to deal liberally, and even tenderly with him, we shall, in general, consider but justice. At the same time, we do not pledge ourselves either to conceal or varnish over such displays of ignorance and disregard of the dignity and true interests of the Profession as (rarely, indeed, but) now and then do occur. These must abide the inevitable consequences to which they lead; and should it ever fall to our lot to animadvert upon any such occurrences, our duty will be to hold up the culpable individual as a warning to the whole community.

We shall, besides articles in the reviewer's department, that we still hope occasionally to be favoured with, by the appearance of works of pretension and importance, endeavour to supply notices of publications relating to these subjects, in all their varieties, whether books of magnitude, pamphlets, or even papers in the periodical journals, by which the student or the practitioner will be able to refer for information of what may be known, or may have been done, concerning matters of interesting and rare occurrence, with readiness that, in many instances, may be to him of the utmost consequence.

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Of the Medical Evidence on the Trial of Dr. Castaing, for Poisoning with Acetate of Morphine.—There has been a very important trial in Paris—the culprit, a Physician, accused of murder, by poison-

ing in a singular manner, and also of forging a will of the persons destroyed by his alleged criminality. Many parts of the evidence are highly interesting, though rendered, according to *our* manner of thinking, unnecessarily disgusting, and, in no small degree, ridiculous, by the usage, in the French criminal courts, of interrogating the accused. However, the peculiarity of this case, as far as medical interests are involved in it, seems to have been the choice, or the alleged choice, of the poison. In his examination, he admitted that he had made poisons the subject of study and experiment; that he was acquainted with certain vegetable poisons, which left no traces of their action; and that he had purchased acetate of morphine to make experiments on animals. In the course of the trial, he admitted that one of the deceased persons, of poisoning whom he stood accused, had drank some hot wine in an inn where they both were; that a servant, who tasted it, found it sour; and that, to his own knowledge, acetate of morphine would communicate a bitter taste; that the deceased had vomited, and that the matter rejected had been thrown away. He ascribed the person's death, however, to *cholera morbus*. He further stated, that he mixed the acetate with an emetic, for the purpose of the experiments; but from examination of the unfortunate prisoner, we must confess that we do not gather any clear notions of the precise lethal act imputed to him—the questions seem to have reference to something already understood, but in no way explained.

Several medical witnesses were examined; and here it is proper for us to state, that we are in possession of no accounts concerning this interesting case, but such as have been published in the ordinary prints of the day. Lænnec is represented as having said that the first person poisoned might have died of a phthisical complaint, under which he had laboured; and that the symptoms might have been produced by poison, which, *as a man*, he was strongly inclined to believe had been the case! Dr. Michel believed his death to have been owing to phthisis, and *not* to poison: he stated that the ordinary effect of acetate of morphine was narcotic, but it varied according to the constitution of the person taking it. Dr. Petit, on reading the defective report (*proces verbal*), thought the various symptoms could not have been produced by *phthisis* alone, but might be the result of poison. The prisoner asked this witness whether peripneumony might not produce a paralysis of the brain? which was admitted, as also that it was not impossible that it should cause a cerebral congestion sufficient to obstruct respiration. Being also asked by Castaing, whether, in consumptive cases, congestions were not sometimes found in the brain, lungs, and duodenum? the fact was admitted, but not that they were caused by phthisis. The witness stated them to be the immediate and natural effects of death. Two apothecaries deposed that they both sold the prisoner acetate of morphine, and one of them twelve grains of *sulphate of soda*, which the prisoner said he had used as a laxative. There must be some mistake here. Orfila was also examined; and the substance of his evidence is represented to be—that, from the *proces verbal*, it was impossible to conclude that the deceased had been poisoned. The appearances there described

might have been produced by the acetate of morphine; but they might also have been caused by a natural malady. He stated that the smallest atom of this substance might be discovered in the stomach, being the easiest vegetable poison to be recognised, unless there had been frequent vomiting. He considered it to be an error that vegetable poisons could not be traced, and expressed himself confident that, under such circumstances, he should be able to detect half a grain of this salt.*

We have, in this notice, endeavoured to restrict ourselves most rigidly to the medical bearings of the case; but, in spite of our strongest resolutions, we cannot conceal some of our dissatisfactions. Here is an individual condemned and executed for an alleged crime, of a most extraordinary and (we will say, upon consideration of the means,) improbable nature. He has suffered the sentence of decapitation for murder, of which, as British men, and men that jurymen are formed of, we say there was not EVIDENCE. In the first place, what is this acetate of morphine, or morphia? We will venture to assert that, with the exception perhaps of Orfila, not one of the witnesses, examined with regard to its properties, had any practical knowledge of it whatever. Secondly, The whole of the medical evidence (as far as the public journals have revealed it to us), even if delivered exactly as it was in France, would, in this country, have been *favourable* to the accused; for it is characterized by *doubt*. Thirdly, we will take upon us to depart a step from our present province, and enter on one that is, nevertheless, more allied to our proper duties than might at first appear; saying, that there are few men of delicate mind, ordinary sensibility, and honourable feeling, who could, day after day, and hour after hour, endure the torturing, if not malignant, *inquisition*, to which persons in the situation of the unfortunate Castaing are subjected in the *enlightened* and philanthropic kingdom of France. Of what avail is the abolition of corporeal torture when that of the mind is urged in the fullest force?

We refer our readers to the newspaper reports, in which, we think the summing up of the *avocat-général*, or, as we might here call it, the address of counsel for the prosecution, will fully bear us out in our preceding animadversions. It is very French, and what is very French is very theatrical. On the other hand, the address of the counsel for the prisoner, though well meant, is by no means such as we think an intelligent English barrister would have produced. The import of the evidence offered by scientific men, *decidedly* (as we should think) in favour of the prisoner, is overlooked. The advocate, however, in alluding to the general tenor of the evidence against his client, is reduced to the humiliating necessity (humiliating for his court) to say, that it would not have been listened to in England, where hearsay evidence is totally inadmissible.

Of course, the evidence regarding the forgery of the will does not

* We cannot find any account of this article in any of Professor's Orfila's writings. We shall hereafter notice the first volume of this author's lecture, lately published—two years after the appearance of the second—of which we have not space to say any thing on the present occasion.

affect our view of the matter, and we have therefore left it out of our notice. Upon this, and upon *one* only, of the charges of poisoning, Castaing was found guilty by a majority of seven jurymen to five.

Trial for Infanticide.—We have often thought, that an occasional comment on a few of the numberless errors and indiscretions daily committed by medical witnesses in our courts of law, might conduce in no small degree to the instruction of our readers, the intimidation of offenders, and the diffusion of a taste for medico-legal studies. But we have been withheld from attempting it, partly by the dread of our motives being misinterpreted, and partly by the inaccurate reports given in our only source of information, the daily papers. The following case, however, (for the particulars of which we are indebted to an esteemed correspondent,) is so glaring in its circumstances, and illustrates so strongly the danger of that practice, which admits all medical persons whatever to give evidence, that we have no hesitation in departing, in this instance, from our usual reserve.

At the last Autumn Circuit, a woman was tried at a county town in Scotland for the crimes of child-murder and concealment of pregnancy. She acknowledged the latter crime, admitted that she wanted but two weeks of her full period, and pointed out where the body might be found. A child's body was accordingly discovered, as she described, in the bottom of a press, covered with earth, and wrapped in an old petticoat. When it was shown to her, she confessed that it was the body of her child, and that it was in the same state as when she buried it. Two medical gentlemen of respectability examined the body. They declared that it was a full-grown child, rather above the ordinary size, and dead for seven or ten days. (It was examined eleven days after the woman's delivery.) A piece of printed calico had been twisted and drawn twice round the lower part of the neck, so as to produce a very remarkable groove; and another piece of cloth of the same description, and doubled, was applied over the head, mouth and chin, and knotted at the back of the neck so strongly as to flatten the nose. The face was turgid and livid; the conjunctiva of the eyes strongly injected with blood. The umbilical cord was divided eight inches from the navel, and had not been tied. No other marks of violence were found on the body The lungs were perfectly free from putridity, and swam in water in the same way as when they have been inflated; and the air-cells visibly contained air. From these circumstances taken together, the two witnesses deponed, that the child must have been born alive, and that its death was caused by suffocation. Three other medical persons, who had not seen the body, were examined for the prisoner; *and all of these gentlemen agreed, that if the child had been dead for the period of eleven days, it was impossible for any medical man to come to a conclusion as to whether the child had been alive at the time of birth.* The verdict was returned, Guilty of Concealment of Pregnancy,—Murder not proven.

Such is the statement of the case, so far as we have been able to acquire information concerning it. It is upon the opinion expressed in the lines printed in italics, that we purpose to make a few remarks.

If that part of the statement be incorrect, the three gentlemen have themselves to blame for what follows; since it was printed in the newspaper immediately afterwards in these very terms; and, if incorrect, it was equally their interest and their duty to rectify it. A declaration so rash, so hazardous to their professional character, so subversive of justice, so hurtful to the stability and reputation of medical evidence in general, it has not been our lot to hear or read in the annals of legal medicine.

We are utterly at a loss to form even the most remote conjecture as to the grounds of this most extraordinary assertion. Do the gentlemen rest it on the opinion of authors? We should gladly learn where they can find a single good modern authority (for moderns only are admissible) to support them. Will they look to the French medical jurists? To Mahon, Belloc, Foderé, Chaussier, Capuron, Lecieux, Orfila? Except Belloc, who is silent on the subject, each of these distinguished authors has stated the very reverse in the most unequivocal language. Will they look then to Germany? Buttner, Haller, Camper, Daniel, Wildberg, Schmidt, and a host besides, agree entirely with the French writers. Or will they turn for succour to their own countrymen?—to Smith, Paris and Fonblanque, Hutchinson, or the Professors of the Edinburgh School? Had they consulted any of these gentlemen, they never would have committed themselves as they have done. Do they found their opinion, then, on express personal experiment? We may safely answer that it is impossible; because experiments have been repeatedly made with the greatest care by the authors quoted, and have invariably led to the opposite conclusion; and had the three witnesses been led by personal researches to form an opinion so hostile to the best established doctrines in medical jurisprudence, it was their bounden duty not to permit its dissemination, unaccompanied by the experiments on which it rested. The only reason why the fact of the child having been born alive, should not have been recognizable eleven days after death, must be the decay of the body. But, even laying aside the evidence of the crown witnesses regarding the integrity of the lungs, are these gentlemen not aware, that the pulmonary tissue is one of the last parts of the body to fall into putrefaction? Of the host of authorities we might adduce in proof of this, we shall subjoin two only, each of whom speaks from personal experiment. Camper found that at a period (sometimes extending to three months) when the whole bones of the body separated from each other under the slightest touch, the lungs of still-born children *had only begun to decay, and did not float in water.* "If the body of a still-born child," says Orfila, in a work published a few months ago, "be allowed to decay entire, the lungs are observed to putrefy with the greatest difficulty; and they barely present slight traces of decomposition, when the skin, muscles, and several of the viscera, have passed into the state of a liquid, stinking mass; and hence buoyancy of the lungs, in consequence of putrefaction, must be an *excessively rare* phenomenon in medico-legal investigation on Infanticide." (*Leçons de Méd. Lég.* i. 269, 1823.) But although the lungs had really been putrid, and did float in conse-

quence of the evolution of gases, are these gentlemen not aware, that this source of fallacy may be obviated—and we presume it was obviated in the present instance—by the very simplest precautions? And, finally, are they not aware, that, besides the buoyancy of the lungs, many other collateral proofs of the child having outlived birth may be discovered long after putrefaction has begun?

It has been observed by many recent writers, that in Britain a conviction for child-murder has become almost impossible; and that the chief obstacle is the insufficient and contradictory evidence of the medical witnesses. The foregoing statement would seem to show, as our correspondent suggests, that, as long as the most unqualified of men are allowed, under the impulse of misguided humanity, to volunteer their opinion, no prisoner will ever be convicted, unless she has cited persons to witness her criminal act. But we earnestly entreat our lawyers not to judge of the value of medical evidence by such mortifying exhibitions as that we have been describing. The more we turn our attention to the subject, the firmer is our conviction,—and in this conviction we are borne out by every one of the few persons in this country entitled to the name of Medical Jurists,—that, to procure a satisfactory and irrefragable opinion in cases of Infanticide, and in all other difficult medico-legal questions, it is only requisite to submit the matter to a dispassionate and skilful investigation. Those little acquainted with Medical Jurisprudence, whether professional or unprofessional, universally confound together *doubt* and *difficulty*. The question involved in the trial which has led to this discussion, must be allowed to be almost always difficult; but we are certain that, when properly examined, scarcely one instance in a hundred will prove doubtful.

In allusion to the present case, we have only farther to add, that, although the crown witnesses appear to us to be in the right, so far as can be judged from the short report put into our hands; yet we are pretty sure that, from a minuter inquiry, they would not escape altogether free from blame. This is shown by the answer returned to a question put by the prisoner's counsel, as to the possibility of the child having died of hemorrhage from the untied umbilical cord. They acknowledge it was possible. Now, that point should have been positively determined by inspection. If the cord was divided by a cutting instrument, the hemorrhage might have been fatal: if it was torn across, hemorrhage was exceedingly improbable, or, as some think, impossible. But if the child did die of hemorrhage, the signs of *anæmia* or exsanguification, if looked for, could not have been missed, or mistaken.